

0012371

SINGLE-SHELL TANK WASTE CHARACTERIZATION FOR TANK 241-U-110 CORE 7
COMPOSITE SEGMENTS 1 2 3 4

DATA PACKAGE

SECTION

6 OF 12

012371



Westinghouse
Hanford Company

6 of 12

P.O. Box 1970 Richland, WA 99352

222-S/RCRA Analytical Laboratories

Project: Single-Shell Tank Waste
Characterization

Tank: 241-U-110

Core: 7

Segment: 2

Customer Id. Number:
89-047

Report Revision: 1

Date Printed: September 28, 1990



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Appendix A
Analytical Analysis Cards

This report consists of pages 1 - 146.

The appendix consists of pages 1 - 37.

I have reviewed this report and certify that the package is in compliance with "Quality Assurance Project Plan for the Chemical Analysis of Highly Radioactive Samples in Support of Environmental Activities on the Hanford Site" - WHC-SD-CP-QAPP-002. I found it to be a true and accurate accounting both technically and for completeness of the laboratory analyses performed on this sample.

Shirley A. Cervantes
Shirley A. Cervantes
Data Coordinator

Date October 3, 1990

Cary M. Seidel
Cary M. Seidel
Unit Manager

Date October 3, 1990

L.H. Taylor
Larry H. Taylor
Laboratory Q.A. Officer

Date October 5, 1990

INTRODUCTION

INTRODUCTION

Westinghouse Hanford Company 222-S/RCRA Analytical Laboratories are supporting the characterization efforts of the single shell tanks. The characterization of tank 241-U-110 was performed under Phase 1A and 1B of the Waste Characterization Plan for the Hanford Site Single-Shelled Tanks (WHC-EP-0210).

Tank 241-U-110 has a 500,000 gallon capacity, construction was completed in 1944. The tank received first cycle waste, REDOX high-level waste, coating waste, and laboratory waste until 1975. Between July 7, 1975 and February 2, 1976, P-10 pumps were installed, and 41,700 gallons of liquid waste were pumped from the tank. Tank 241-U-110 still contains an estimated 195,000 gallons of waste.

Analytical Laboratories performs all analytical analysis to the specifications of the Quality Assurance Project Plan, WHC-SD-CP-QAPP-002. In accordance with WHC-SD-CP-QAPP-002 the following laboratory policies are being followed. Spikes are performed on either the undissolved sample, or the sample after dissolution as directed by the chemist. If the spike addition is found to be less than 20% of an analyte concentration, the spike recovery is not reported due to errors introduced by the precision of the sample analysis. The concentration of spike additions will be re-evaluated before the start of phase 1C. Two spiking routines are being used during phase 1A and 1B. For the following analyses, Ion Chromatography, Inductively Coupled Plasma, Mercury Hydride, Total Organic Carbon, and Carbonate analyses the solid sample is spiked independently from the sample digestion. Any non-homogeneity of the sample could adversely affect the spike recoveries. For the radio-isotopic analysis and other analyses not specified above the spikes were preformed by spiking an aliquot of sample after digestion.

The laboratory does not report sample results from batch analyses that are questionable. The results from questionable batches are discarded and the analysis is repeated. Sample cards (laboratory travelers) for the repeated analysis are reissued for analysis after they have been stamped "rerun". Laboratory travelers are issued using a computerized routine according to a "sample point". This sample point label (segment-n) on the Laboratory travelers and on the GEA analysis reports has no relationship to the sampling activities or the sample identification. All results in this data package relate only to the sample identified as segment 2 from core 7 taken from tank 241-U-110.

The organic analysis of this sample will be performed by Pacific Northwest Laboratories (PNL). Due to instrument and procedure problems, PNL has been unable to separate organics from the normal paraffin hydrocarbon present in the samples. The results from the organic analysis will be provided when available.

Samples analyzed for Total Organic Carbon between November 1, 1989 and February 22, 1990 were not acidified. The results from these analyses include total organic carbon, carbonate, and dissolved carbon dioxide from the air. The validity of these analysis are subject to interpretation. The total organic carbon procedure was corrected and these analyses will be repeated wherever possible.

All sample results reported here by weight are reported as the "wet weight" of the sample. Some samples did noticeably lose moisture during the process of aliquoting and weighing the sample for digestion. In order to minimize errors due to loss of moisture, the percent moisture was determined at the earliest opportunity. Attempts to dry the sample before analysis resulted in approximately a ten fold increase in radiation levels. In order to reduce and control radiation exposure to laboratory personnel the samples were not dried before aliquoting and digestion. This may result in some laboratory results being biased high.

This report is formatted into sections corresponding to the type of dissolutions performed prior to analysis. A brief summary of analytical results is reported, followed by calibration data and an analysis batch report. Any notable observations regarding an analysis are noted on the batch report for that analysis. Copies of laboratory travelers can be found in Appendix A.

SAMPLING AND CUSTODY DATA

6 r-0125

CHAIN-OF-CUSTODY RECORD FOR CORE SAMPLING

(1) Shipment Number S-025-89 (2) Sample Number 89-047 (3) Supervisor D.C. HARREY
 (4) Tank 1104 (5) Riser #7 (6) Segment 2 (7) Cask Serial Number C-1017

Radiation Survey Data:		(B) FIELD	(20) LABORATORY	(9) Shipment Description:
Over Top Dose Rate		<u>.6mR/hr.</u>	<u>.6mR/hr</u>	A. Work Package Number <u>2W-89-00955-W</u>
Side Dose Rate		<u>.5mR/hr</u>	<u>3 mR/hr</u>	B. Cask Seal Number <u>For Future Use</u>
Bottom Dose Rate		<u>1.5mR/hr</u>	<u>3 mR/hr</u>	C. Sampler Number Used <u>22</u>
Smearable Contamination		<u>L Det.</u> (alpha)	<u>L Det</u> (alpha)	D. Date and Time Sampler Unseated <u>11-16-89, 1008</u>
		<u>L Det.</u> (beta-gamma)	<u>L Det</u> (beta-gamma)	E. Expected Liquid Content <u>20%</u>
	RPT	<u>Kimberly</u> (Signature)	RPT <u>Darnold</u> (Signature)	F. Expected Solid Content <u>80%</u>
				G. Dose Rate Through Drill String <u>120mR/Hr</u>
				H. Expected Sample Length <u>19"</u>

(10) INFORMATION (Include statement of laboratory tests to be performed.*)

Core #007, WHC-EP-0210 Waste Characterization Plan for the Hanford Site Single-Shell Tanks

*Reference laboratory work required, if available.

Comments:

(11) POINT OF ORIGIN <u>241-4</u> <u>110</u>	(12) SENDER NAME <u>D.C. HARREY</u> SENDER SIGNATURE <u>D.C. Hartley</u>	(13) DATE AND TIME RELEASED <u>11-17-89</u> <u>0930</u>	(14) DESTINATION <u>222S</u> <u>LABS,</u> <u>g00akot</u>	(16) RECIPIENT NAME <u>Vida Boyle</u> RECIPIENT SIGNATURE <u>Vida Boyle</u>	(17) DATE AND TIME RECEIVED <u>11/17/89</u> <u>1000</u>
(15) Seal Intact Upon Release? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(18) Seal Intact Upon Receipt? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		(19) Seal Data Consistent with this Record? Shipment No. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
				Sample No. <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Single Shell Tank Waste Characterization Summary of Core Sample

TANK ID:	241-U-110
RISER ID:	7
CORE ID:	7

DATE SAMPLING INITIATED:	11-15-89
DATE SAMPLING COMPLETED:	11-16-89

SEGMENT	
1	Lab Serial No. F0197
	Customer ID No. 89-046
	Last Segment? NO
2	Lab Serial No. F0125
	Customer ID No. 89-047
	Last Segment? NO
3	Lab Serial No. F0149
	Customer ID No. 89-048
	Last Segment? NO
4	Lab Serial No. F0173
	Customer ID No. 89-049
	Last Segment? YES
5	Lab Serial No.
	Customer ID No.
	Last Segment?
6	Lab Serial No.
	Customer ID No.
	Last Segment?
7	Lab Serial No.
	Customer ID No.
	Last Segment?

SEGMENT	
8	Lab Serial No.
	Customer ID No.
	Last Segment?
9	Lab Serial No.
	Customer ID No.
	Last Segment?
10	Lab Serial No.
	Customer ID No.
	Last Segment?
11	Lab Serial No.
	Customer ID No.
	Last Segment?
12	Lab Serial No.
	Customer ID No.
	Last Segment?
13	Lab Serial No.
	Customer ID No.
	Last Segment?
14	Lab Serial No.
	Customer ID No.
	Last Segment?

SAMPLE DATA SUMMARY

SUMMARY DATA REPORT

Tank 241-U-110
 Core 7
 Segment 2
 Customer Id: 89-047

Acid Digestion

Undigested Sample	ICP Results			
	Sample	Duplicate	Wet Weight Sample	Wet Weight Sample
pH	12.42	12.95		
%Water	34.50%	37.30%		
			ug/g	ug/g
Fusion Dissolution				
	Sample	Duplicate		
Fusion Digestion	2.33 g/L	1.95 g/L	Aluminum	131520 ug/g
Total Alpha	1.94 uci/g	1.45 uci/g	Antimony	520 ug/g
Total Beta	9.10E+02 uci/g	7.44E+02 uci/g	Barium	27 ug/g
GEA			Beryllium	1 ug/g
Cs-137	1.81E+01 uci/g	1.73E+01 uci/g	Bismuth	3050 ug/g
Uranium	1.27E+04 ug/g	1.32E+04 ug/g	Boron	LT
			Cadmium	LT
			Calcium	321 ug/g
			Cerium	LT
			Chromium	267 ug/g
			Copper	204 ug/g
			Europium	LT
			Iron	6509 ug/g
			Lanthanum	LT
			Lead	630 ug/g
			Lithium	LT
			Magnesium	1304 ug/g
			Manganese	4172 ug/g
			Mercury	LT
Water Digestion				
	Sample	Sample		
Water Digestion	8.59 g/L	8.60 g/L	Duplicate	
Ion Chromatograph				
Fluoride	<1.18E+03 ug/g	<1.17E+03 ug/g	Sodium	53905 ug/g
Chloride	<1.18E+03 ug/g	<1.17E+03 ug/g	Strontium	548 ug/g
Nitrate	2.99E+04 ug/g	2.59E+04 ug/g	Sulfur	218 ug/g
Phosphate	<1.18E+04 ug/g	<1.17E+04 ug/g	Tantalum	LT
Sulfate	<1.18E+04 ug/g	<1.17E+04 ug/g	Thallium	4420 ug/g
			Thorium	LT
			Tin	73 ug/g
			Titanium	49 ug/g
Total Organic Carbon	1.61E+03 ug/g	1.41E+03 ug/g	Uranium	10546 ug/g
			Vanadium	39 ug/g
			Zinc	69 ug/g
			Zirconium	183 ug/g
			LT	LT

LT: Less Than

NC: Not Calibrated

NOT CALC: Not Calculated

Instrument Standards Outside Control Limits

revised Oct. 2, 1990

PHYSICAL TEST RESULTS

Single Shell Tank Extrusion of Segment -- Physical Tests

LAB SEGMENT SERIAL #: F0125	CUSTOMER ID: 89-047	
ANALYST: Richard L. Weiss	DATE EXTRUDED: November 21, 1989	
DRAINABLE LIQUID	Liquid Submitted for Segment Analysis? -- NO	
GROSS 38.28	TARE 22.50	NET 16.38
SERIAL	DATE/TIME	ESTIMATED
SPECIFIC	CALCULATED	

APPEARANCE OF LIQUID:

DIMENSIONS OF SEGMENT

Completed Segment Obtained?	No	LENGTH: 15.00	CALCULATED VOLUME: 11.78 in ³
REMARKS	None		

APPEARANCE OF SOLIDS: Bottom 12 inches of sample dark gray to black in color, cohesive and firm. Top 3 inches white, granular, crumbly, non-cohesive with a slippery/slimey texture.

PENETROMETER	12.2	lbs/sq in	REMARKS: None
--------------	------	-----------	---------------

HOMOGENIZATION

PROCEDURE: T038A-00712	REVISION: F	QUANTITY OF MATERIAL: 282.04	GRAMS
DATE HOMOGENIZED:	12-28-89	TIME HOMOGENIZED:	5.0 MINUTES
OPERATOR:	Richard L. Weiss		

LABORATORY NOTEBOOK REFERENCE	WHC-N-313-4	11
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Single Shell Tank Segment -- Subsamples

LAB SEGMENT SERIAL #:

F0125

CUSTOMER ID: 89-047

VOLATILE ORGANIC ANALYSIS

VOA SAMPLE

LAB SERIAL #: 89-047-79

DATE SAMPLED: 11-21-89

PARTICLE SIZE DISTRIBUTION ANALYSIS

PARTICLE SIZE SAMPLE

LAB SERIAL #: F0125

DATE SAMPLED: 12-28-89

Homogenized Solids

UNDIGESTED SOLIDS ANALYSIS

LABORATORY SERIAL NUMBER FOR SAMPLE:

F0125

DATE SAMPLED: 12-28-89

LABORATORY SERIAL NUMBER OF DUPLICATE SAMPLE: F0126

FUSION ANALYSIS OF SOLIDS

LABORATORY SERIAL NUMBER OF SAMPLE:

F0130

DATE SAMPLED: 12-28-89

LABORATORY SERIAL NUMBER OF DUPLICATE SAMPLE: F0131

LABORATORY SERIAL NUMBER OF SPIKED SAMPLE: F0132

ACID DIGESTION ANALYSIS OF SOLIDS

LABORATORY SERIAL NUMBER OF SAMPLE:

F0140

DATE SAMPLED: 12-28-89

LABORATORY SERIAL NUMBER OF DUPLICATE SAMPLE: F0141

LABORATORY SERIAL NUMBER OF SPIKED SAMPLE: F0142

WATER DIGESTION ANALYSIS OF SOLIDS

LABORATORY SERIAL NUMBER OF SAMPLE:

F0135

DATE SAMPLED: 12-28-89

LABORATORY SERIAL NUMBER OF DUPLICATE SAMPLE: F0136

LABORATORY SERIAL NUMBER OF SPIKED SAMPLE: F0137

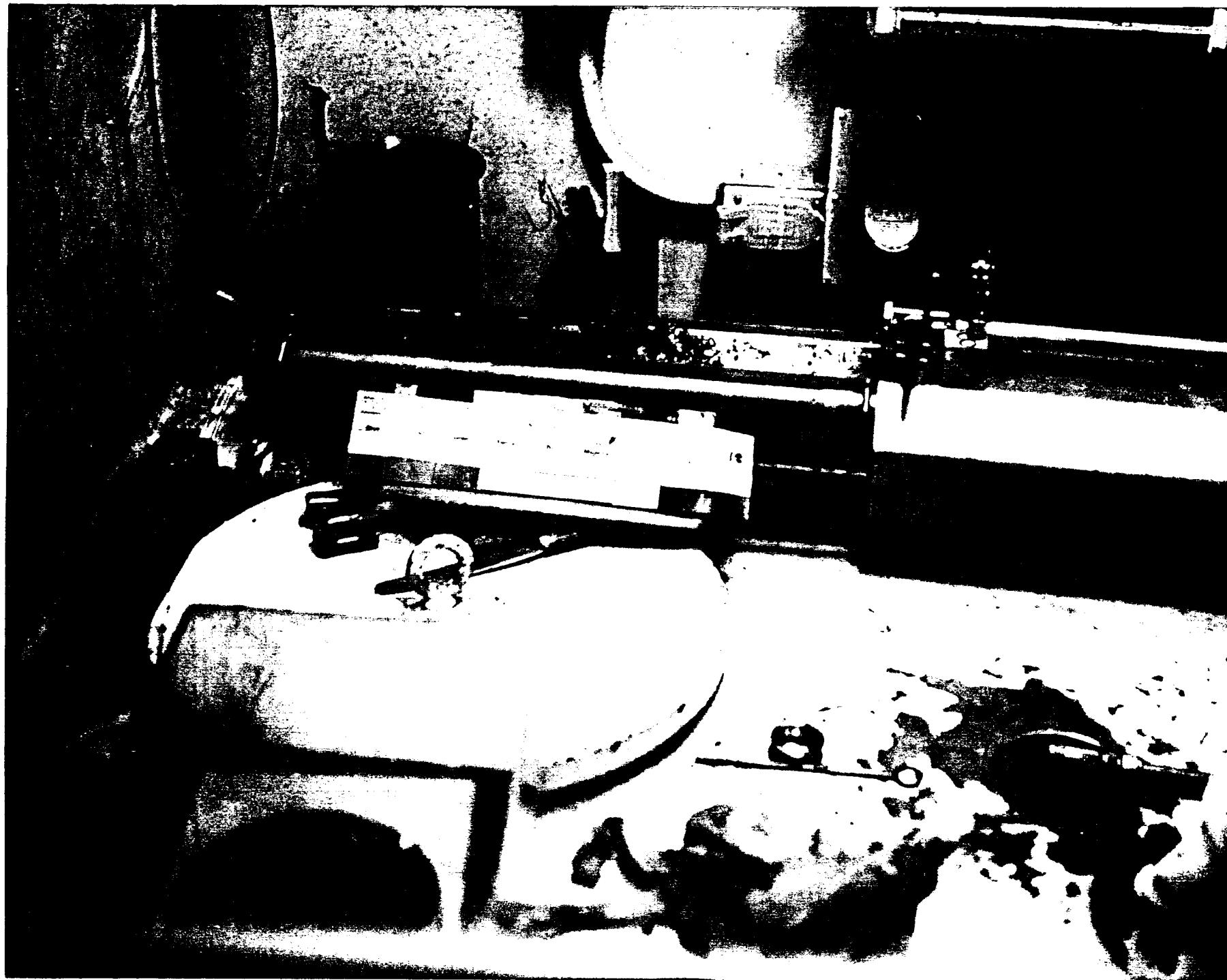
Laboratory Notebook Reference

WHC-N-313-4

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TANK 241-U-110 CORE 7 SEGMENT 2

Particle Size Analyzer

PROCESS CHEMISTRY LABS PARTICLE ANALYSIS
VIA BRINKMANN 2010
STATISTICS

SAMPLE NAME : SST, B000084, F0125, H2O, SBK
FILE NAME : F0125.001

DATE	: 01/12/1989	ACQ. RANGE	: 0.5-150	COUNTS	: 90724
TIME	: 12:04	ACQ. MODE	: SAMPLE	S.N.F.	: 0.50
CONFIG.	: 1 (0.7 S1)	ACQ. TIME	: 424 SEC	S.D.U.	: 7073
CELL TYPE	: MAGNETIC (3)	SAMPLE SIZE	: 4	CONCENTR.	: 6.9E+06 #/ml
SAMPLE TYPE	: REGULAR	REQ. CONF.	: 95.00% (V)	SOLIDS	: 1.1E-02 %

	MEAN Diameter	S.D.
Number, Length	1.72 μm	1.58 μm
Number, Area	2.33 μm	1.69 μm
Number, Volume	3.09 μm	2.09 μm
Length, Area	3.16 μm	2.67 μm
Length, Volume	4.14 μm	2.84 μm
Area, Volume	5.41 μm	4.44 μm
Volume, Moment	9.05 μm	7.84 μm

	MEDIAN Diameter	MODE	CONFIDENCE
Number	1.09 μm	0.75 μm	100.00%
Area	4.66 μm^2	4.75 μm^2	100.00%
Volume	6.19 μm^3	4.75 μm^3	99.42%

Sample mixed dark brown solids and white, ^{-gray} crystals, grainy texture
dispersed well in H₂O, nil agglomeration
dispersed particles < 150 μ

DATE : 01/12/1989 | ACO. RANGE : 0.5-60 | COUNTS : 90502
 TIME : 12:23 | ACO. MODE : SAMPLE | S.N.F. : 0.50
 CONFIG. : 1 (0.7 S1) | ACO. TIME : 365 SEC | S.D.U. : 7184
 CELL TYPE : MAGNETIC (3) | SAMPLE SIZE : 4 | CONCENTR. : 8.3E+06 #/ml
 SAMPLE TYPE : REGULAR | REQ. CONF. : 95.00%(V) | SOLIDS : 1.0E-02 %

MEAN Diameter S.D.

Number, Length	:	1.61 μm	1.49 μm
Number, Area	:	2.19 μm	1.60 μm
Number, Volume	:	2.88 μm	1.96 μm
Length, Area	:	2.98 μm	2.45 μm
Length, Volume	:	3.86 μm	2.61 μm
Area, Volume	:	5.00 μm	3.77 μm
Volume, Moment	:	7.85 μm	6.91 μm

MEDIAN Diameter MODE CONFIDENCE

Number	:	1.02 μm	0.55 μm	100.00%
Area	:	4.40 μm ²	4.86 μm ²	99.59%
Volume	:	5.84 μm ³	4.86 μm ³	99.53%

Particle Size Analyzer

PROCESS CHEMISTRY LABS PARTICLE ANALYSIS
VIA BRINNEMANN 2010

SAMPLE NAME : SST,B000084,F0125,H20,SBK

FILE NAME : F0125.001

DATE : 01/12/1989 | ACO. RANGE : 0.5-150 | COUNTS : 90724
 TIME : 12:04 | ACO. MODE : SAMPLE | S.N.F. : 0.50
 CONFIG. : 1 (0.7 61) | ACO. TIME : 424 SEC | S.D.U. : 7073
 CELL TYPE : MAGNETIC (3) | SAMPLE SIZE : 4 | CONCENTR. : 6.9E+06 #/ml
 SAMPLE TYPE : REGULAR | REQ. CONC. : 95.00%(V) | SOLIDS : 1.1E-02 %

PROBABILITY VOLUME DISTRIBUTION GRAPH

Name: SST,B000084,F0125,H20,SBK

1.1E-04 cc/ml(100,0%)

Mean(ny): 3.09pm

S.D. (nv): 2.09pm

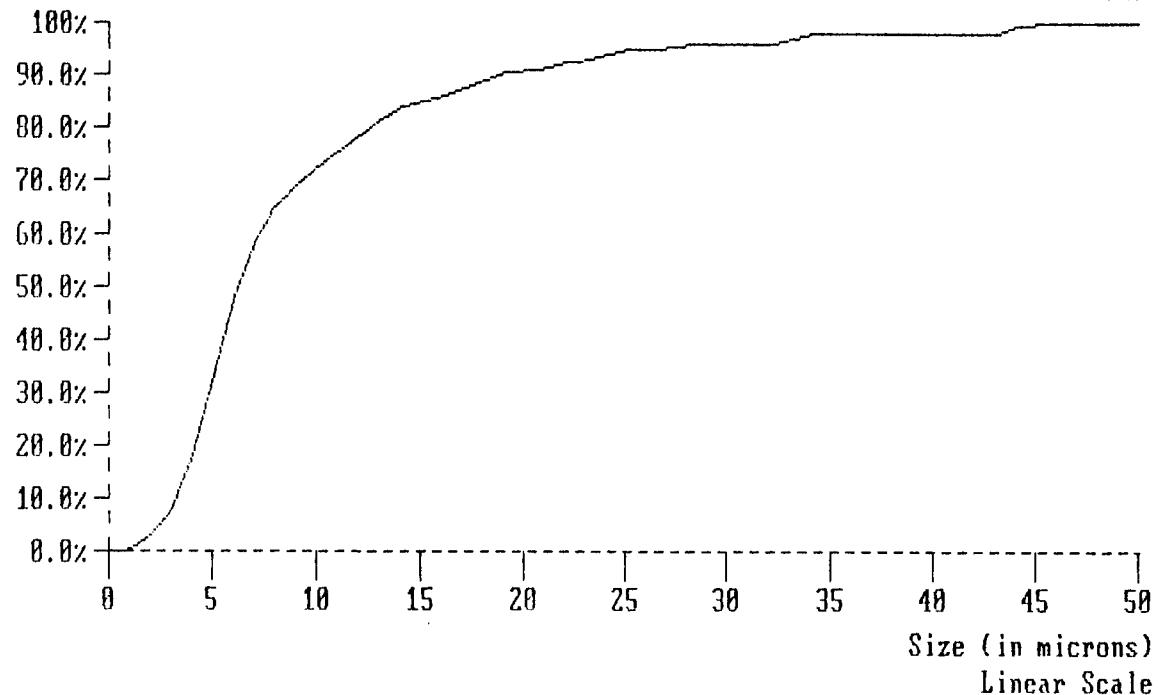
Median : 6.18pm

Mean(ym): 9.85pm

S.D. (μ m): 7.84 μ m

Conf(vm): 99,42 %

<< SCALE RANGE (μm): ADJUSTED >>



UNDIGESTED SAMPLE ANALYSIS RESULTS

Single Shell Tank Project**Untreated Sample Results**

Tank: 241-U-110

Core: 7

Segment: 2

Customer ID 89-047

	Check Standard	Blank	Sample	Sample Duplicate	Check Standard
Laboratory ID:	F0100	F0121	F0125	F0126	F0292
pH	101.00%	6.83	12.42	12.95	100.90%
Laboratory ID:	F0100	F0309	F0125	F0126	F0292
%Water	96.63%	6.5 mg	34.50%	37.30%	96.80%

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	AL10653
PROCEDURE/REV	LA-212-103/A-0
TECHNOLOGIST	M. Franz
DATE	January 02, 1990
TEMPERATURE	23.6 C
STARTING TIME	1300
ENDING TIME	2000
CHEMIST	R. E. Brandt

pH Analysis of Solid Sample.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0100
2	Reagent Blank	F0121
3	Sample 89-045	F0101
4	Duplicate of Sample 89-045	F0102
5	Sample 89-047	F0125
6	Duplicate of Sample 89-047	F0126
7	Sample 89-048	F0149
8	Duplicate of Sample 89-048	F0150
9	Sample 89-050	F0289
10	Duplicate of Sample 89-050	F0290
11	Final LMCS Check Std	F0292

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQUT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	72C11A/5.0 mL			5.0 mL

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	N/A
PROCEDURE/REV	LA-564-101/D-0
TECHNOLOGIST	R. D. Hale
DATE	January 03, 1990
TEMPERATURE	120 C
STARTING TIME	1100 01-02-90
ENDING TIME	1100 01-03-90
CHEMIST	R. E. Brandt

% Water in Sample.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0100
2	Reagent Blank	F0309
3	Sample 89-047	F0125
4	Duplicate of Sample 89-047	F0126
5	Sample 89-048	F0149
6	Duplicate of Sample 89-048	F0150
7	Sample 89-050	F0289
8	Duplicate of Sample 89-050	F0290
9	Sample 89-045	F0101
10	Duplicate of Sample 89-045	F0102
11	Final LMCS Check Std	F0292

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	11C11AG/1.0 mL			1.0 ml

KOH FUSION ANALYSIS

Single Shell Tank Project

Fusion Analysis

Laboratory Results of Solids
Units Are Sample Wet Weight

Tank: 241-U-110
 Core: 7
 Segment: 2
 Customer ID: 89-047

	Check Standard	Blank	Sample	Sample Duplicate	Spike of Sample	Check Standard
Laboratory ID:	N/A	F0168	F0130	F0131	N/A	N/A
Fusion Digestion	N/A	N/A	2.33 g/L	1.95 g/L	N/A	N/A
Laboratory ID:	F0105	F0308	F0130	F0131	F0296	F0297
Total Alpha	111.90%	<1.00E-04 uci/L	1.94 uci/g	1.45 uci/g	97.10%	100.30%
Total Beta	98.80%	<2.58E-04 uci/L	9.10E+02 uci/g	7.44E+02 uci/g	*	96.50%
Laboratory ID: GEA Cs-137	F0129 98.10%	F0308 2.49E-01 uci/L	F0130 1.81E+01 uci/g	F0131 1.73E+01 uci/g	F0296 99.10%	F0297 99.10%
Laboratory ID: Uranium	F0105 98.70%	F0120 <1.04E-02 g/L	F0130 1.27E+04 ug/g	F0131 1.32E+04 ug/g	F0108 *	F0297 108.30%

* Too Low To Calculate.

Single Shell Tank Project

Fusion Analysis
Sample Results on Laboratory Digestions

Tank: 241-U-110
 Core: 7
 Segment: 2
 Customer ID: 89-047

	Check Standard	Blank	Sample	Sample Duplicate	Spike of Sample	Check Standard
Laboratory ID:	F0105	F0168	F0130	F0131	F0296	F0297
Fusion Digestion			2.33 g/L	1.95 g/L		
Laboratory ID:	F0105	F0308	F0130	F0131	F0296	F0297
Total Alpha	111.90%	<1.00E-04 uci/L	4.52 uci/L	2.82 uci/L	97.10%	100.30%
Total Beta	98.80%	<2.58E-04 uci/L	2.12E+03 uci/L	1.45E+03 uci/L	115.00%	96.50%
Laboratory ID:	F0129	F0308	F0130	F0131	F0296	F0297
GEA Cs-137	98.10%	2.49E-01 uci/L	4.21E+01 uci/L	3.37E+01 uci/L	99.10%	99.10%
Laboratory ID:	F0105	F0120	F0130	F0131	F0108	F0297
Uranium	98.70%	<1.04E-02 g/L	2.95E-02 g/L	2.58E-02 g/L	*	108.30%

* Too Low To Calculate.

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	N/A
PROCEDURE/REV	LA-549-141/A-0
TECHNOLOGIST	R. D. Hale
DATE	January 03, 1990
TEMPERATURE	23 C
STARTING TIME	1000
ENDING TIME	1200
CHEMIST	S. A. Catlow

Fusion Dissolution

	DESCRIPTION	LAB ID
1	Reagent Blank	F0168
2	Sample 89-045	F0106
3	Duplicate of Sample 89-045	F0107
4	Sample 89-047	F0130
5	Duplicate of Sample 89-047	F0131
6	Sample 89-048	F0154
7	Duplicate of Sample 89-048	F0155
8	Sample 89-050	F0294
9	Duplicate of Sample 89-050	F0295
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY BOOK # & ALIQUOT VOL.	SECOND BOOK # & ALIQUOT VOL.	THIRD BK# & ALQT.VOL.	FINAL VOL. OF STD.
N/A				

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	WA93415
PROCEDURE/REV	LA-508-101/C-1
TECHNOLOGIST	J. A. Hopkins
DATE	January 05, 1990
TEMPERATURE	70 F
STARTING TIME	0930
ENDING TIME	1400
CHEMIST	S. A. Catlow

Total Alpha
Total Beta
Fusion Dissolution
Detector #18

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0105
2	Reagent Blank	F0308
3	Sample 89-045	F0106
4	Duplicate of Sample 89-045	F0107
5	Sample 89-047	F0130
6	Duplicate of Sample 89-047	F0131
7	Sample 89-048	F0154
8	Duplicate of Sample 89-048	F0155
9	Sample 89-050	F0294
10	Duplicate of Sample 89-050	F0295
11	Spike 89-050	F0296

	DESCRIPTION	LAB ID
12	Final LMCS Check Std	F0297
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQOT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	83B44/10mL			10mL
Spike	83B44/10mL	F0294/100uL		10.1mL

Single Shell Tank

Calibration Record

ANALYTE:	Am ²⁴¹		
PROCEDURE:	LQ-508-002	REVISION:	A-0
INSTRUMENT:	Detector #18	PROPERTY NUMBER:	WA93415
TECHNOLOGIST:	R.A. Jones	PAYROLL NUMBER:	65801
DATE:	June 28, 1989		
CALIBRATION STANDARD ID: 36B40A3; 36B40B3; 36B40C3; 36B40A6; 36B40B6; 36B40C5; 36B40A8; 36B40B7; 36B40C7			
ANALYTE CONCENTRATION:	N/A		
TYPE OF CALIBRATION:	Efficiency		

SST-103 Rev. (Draft) 9/15/90 Short Interim

CALIBRATION SHEET FOR ALPHA/BETA SYSTEMS: USING PROCEDURE LQ-508-002

DETECTOR No.	18	TIME ZERO DATE (HD):	15897
RADIOMUCLIDE:	Am-241	DATE COUNTED (HD):	16347
HALF LIFE:	154497		
COUNT TIME:	5		
CPM BKG:	0.2		

CALIBRATED BY: RA JONES HD 0 = 09/25/44

NOTE: Date of calibration for two inch and five inch size discs
is a counting room error. It should read 06-28-89 not
06-28-80.

STANDARD ID	SIZE	DATE	TIME	COUNTS @ 0 DEG.	COUNTS @ 90 DEG.	COUNTS @ 180 DEG.	COUNTS @ 270 DEG.
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36B40A3	2	06/28/80	1542	67207	66768	67025	66645
36B40B3	2	06/28/80	1547	115573	116337	116289	116143
36B40C3	2	06/28/80	1552	162269	162819	162370	161593
36B40A6	5	06/28/80	1558	61627	62404	61970	61272
36B40B6	5	06/28/80	1603	118582	119217	118566	119430
36B40C5	5	06/28/80	1608	164322	165699	166216	166176

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
-------------	------	-----------	---------	------------	----------------	------------

36B40A8	1"	60570	0	1.00	0	0.0000
36B40B7	1"	109900	0	1.00	0	0.0000
36B40C7	1"	159700	0	1.00	0	0.0000

AVERAGE, 1" =	0.0000 +/- 095%	0.0000	-97.62 %	ON	06/28/89
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STANDARD ID	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
-------------	-----------	---------	------------	----------------	------------

36B40A3	2"	61800	13382	1.00	13409	0.2170
36B40B3	2"	110700	23217	1.00	23264	0.2102
36B40C3	2"	161400	32452	1.00	32518	0.2015

AVERAGE, 2" =	0.2095 +/- 095%	0.0152	7.27 %	ON	06/28/89
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STANDARD ID	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
-------------	-----------	---------	------------	----------------	------------

36B40A6	5"	59470	12363	1.00	12388	0.2083
36B40B6	5"	109800	23790	1.00	23838	0.2171
36B40C5	5"	160100	33120	1.00	33187	0.2073

AVERAGE, 5" =	0.2109 +/- 095%	0.0106	5.01 %	ON	06/28/89
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NEW EFFS FOR DET	18 Am-241	1" =	0.0000	2" =	0.2095
		5" =	0.2109		

Single Shell Tank

Calibration Record

ANALYTE:	Co ⁶⁰			
PROCEDURE:	LQ-508-002	REVISION:	A-0	
INSTRUMENT:	Detector #18		PROPERTY NUMBER:	WA93415
TECHNOLOGIST:	R.A. Jones		PAYROLL NUMBER:	65801
DATE:	June 28, 1989			
CALIBRATION STANDARD ID: 100B40A2; 100B40B1; 100B40C1; 32B40A4; 32B40B3; 32B40C4; 32B40A5; 32B40B6; 32B40C5				
ANALYTE CONCENTRATION:	N/A			
TYPE OF CALIBRATION:	Efficiency			

SST-103 Rev. (Draft) 9/15/90 Short Interim

CALIBRATION SHEET FOR ALPHA/BETA SYSTEMS: USING PROCEDURE LQ-508-002

DETECTOR No.	18	2",5" STD TIME ZERO DATE (HD):	15883
RADIOMUCLIDE:	Co-60	1" STD TIME ZERO DATE (HD):	16573
HALF LIFE:	1925	DATE COUNTED (HD):	16347
COUNT TIME:	5	DATE COUNTED 1" (HD)	
CPM BKG:	5		
CPM 1" BKG:			

CALIBRATED BY: RA JONES HD 0 = 09/25/44

NOTE: Date of calibration for two inch and five inch size discs
is a counting room error. It should read 06-28-89 not
06-28-80.

STANDARD ID	SIZE	DATE	TIME	COUNTS @ 0 DEG.	COUNTS @ 90 DEG.	COUNTS @ 180 DEG.	COUNTS @ 270 DEG.
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32B40A4	2	06/28/80	1510	95552	95030	96367	94943
32B40B3	2	06/28/80	1515	179993	179923	180564	179845
32B40C4	2	06/28/80	1521	266251	266109	266791	262848
32B40A5	5	06/28/80	1526	80056	79664	81559	79720
32B40B6	5	06/28/80	1531	159760	162820	161429	163674
32B40C5	5	06/28/80	1536	234482	235955	237348	236432

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
100B40A2	1"	67290	0	0.00	0	0.0000
100B40B1	1"	137800	0	0.00	0	0.0000
100B40C1	1"	199700	0	0.00	0	0.0000
AVERAGE, 1" =		0.0000 +/- @95%	0.0000	ERR %	ON	06/28/89

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A4	2"	70480	19090	1.18	22561	0.3201
32B40B3	2"	135100	36011	1.18	42560	0.3150
32B40C4	2"	202400	53095	1.18	62750	0.3100
AVERAGE, 2" =		0.3151 +/- @95%	0.0099	3.13 %	ON	06/28/89

STANDARD ID	SIZE	STD VALUE	AVE CPM	DECAY CORR	DECAY CORR CPM	EFFICIENCY
32B40A5	5"	70160	16045	1.18	18963	0.2703
32B40B6	5"	135700	32379	1.18	38267	0.2820
32B40C5	5"	201900	47206	1.18	55790	0.2763
AVERAGE, 5" =		0.2762 +/- @95%	0.0115	4.16 %	ON	06/28/89

NEW EFFS FOR DET	18 Co-60	1" =	0.0000	2" =	0.3151
		5" =	0.2762		

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	N/A
PROCEDURE/REV	LA-548-121/C-1
TECHNOLOGIST	D. M. Southwick
DATE	January 09, 1990
TEMPERATURE	72 F
STARTING TIME	1230
ENDING TIME	1400
CHEMIST	S. A. Catlow

GEA Analysis
Fusion Dissolution
Detectors 1, 2, 3, & 4
Samples are prepared in batch
but counted randomly.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	F0129
2	Reagent Blank	F0308
3	Sample 89-047	F0130
4	Duplicate of Sample 89-047	F0131
5	Sample 89-048	F0154
6	Duplicate of Sample 89-048	F0155
7	Sample 89-050	F0294
8	Duplicate of Sample 89-050	F0295
9	Spike 89-050	F0296
10	Final LMCS Check Std	F0297
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQ.T.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	89B44/.5mL			22mL
Spike	89B44/.1mL	F0294/1.0mL		22mL

Single Shell Tank Calibration Record

ANALYTE: Isotope, Mixed Gamma

PROCEDURE: LQ-508-003

REVISION: A-0

INSTRUMENT: GEA Detector #1

PROPERTY NUMBER: 401934

TECHNOLOGIST: J. L. Anderson

PAYROLL NUMBER: 61413

DATE: February 14, 1989

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

COMMENTS:

Single Shell Tank Calibration Record

ANALYTE: Isotope, Mixed Gamma

PROCEDURE: LQ-508-003

REVISION: A-0

INSTRUMENT: GEA Detector #1

PROPERTY NUMBER: 401934

TECHNOLOGIST: J. L. Anderson

PAYROLL NUMBER: 61413

DATE: February 16, 1989

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

COMMENTS:

DETECTOR: 1
 GEOMETRY CODE: 42
 GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 2
 CALIBRATION DATE: 14-Feb-89
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	5.721347E-03
88.032	1.512568E-02
122.0614	2.041958E-02
165.853	1.856472E-02
279.1967	
391.668	1.042777E-02
513.99	7.856059E-03
661.65	6.838966E-03
898.021	5.300244E-03
1173.237	4.218416E-03
1332.501	3.785537E-03
1836.129	2.931033E-03

EQUATION 0-165 KEV

$$\begin{aligned}
 \text{LOG(EFF)} = & -5.343694\text{E+01} \\
 & + 2.034704\text{E+01} * \text{LOG(ENERGY)} \\
 & + -2.088264\text{E+00} * \text{LOG(ENERGY)}^2
 \end{aligned}$$

EQUATION 165-1836 KEV

$$\begin{aligned}
 \text{LOG(EFF)} = & 8.372735\text{E+00} \\
 & + -7.762489\text{E+00} * \text{LOG(ENERGY)} \\
 & + 2.017698\text{E+00} * \text{LOG(ENERGY)}^2 \\
 & + -2.447560\text{E-01} * \text{LOG(ENERGY)}^3 \\
 & + 1.067720\text{E-02} * \text{LOG(ENERGY)}^4
 \end{aligned}$$

GEA CALIBRATION RECORD

PROCEDURE LQ-508-003

DETECTOR: 1
 GEOMETRY CODE: 43
 GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 3
 CALIBRATION DATE: 16-Feb-89
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	1.397695E-03
88.032	3.641448E-03
122.0614	5.035820E-03
165.853	4.620516E-03
279.1967	
391.668	2.619018E-03
513.99	1.890740E-03
661.65	1.782478E-02
898.021	1.392563E-03
1173.237	1.117189E-03
1332.501	1.007670E-03
1836.129	7.782502E-04

EQUATION 0-165 KEV

$$\text{LOG(EFF)} = -5.354869\text{E+01}$$

+ 1.975356E+01 *LOG(ENERGY)
+ -2.020858E+00 *LOG(ENERGY)^2

EQUATION 165-1836 KEV

LOG(EFF) = 4.001880E+01
+ -2.857555E+01 *LOG(ENERGY)
+ 6.748440E+00 *LOG(ENERGY)^2
+ 7.173093E-01 *LOG(ENERGY)^3
+ 2.821780E-02 *LOG(ENERGY)^4

GEA CALIBRATION RECORD

PROCEDURE LQ-508-003

Single Shell Tank Calibration Record

ANALYTE: Mixed Isotope Standards

PROCEDURE: LQ-508-003

REVISION: A-3

INSTRUMENT: GEA Detector # 2

PROPERTY NUMBER: 401934

TECHNOLOGIST: J. L. Anderson

PAYROLL NUMBER: 61413

DATE: October 21, 1988

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

COMMENTS:

Single Shell Tank Calibration Record

ANALYTE: Mixed Isotope Standards

PROCEDURE: LQ-508-003

REVISION: A-3

INSTRUMENT: GEA Detector #2

PROPERTY NUMBER: 401934

TECHNOLOGIST: J. L. Anderson

PAYROLL NUMBER: 61413

DATE: September 28, 1988

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

COMMENTS:

DETECTOR: 2
 GEOMETRY CODE: 42
 GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 2
 CALIBRATION DATE: 21-Oct-88
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	3.417000E-03
88.032	1.090000E-02
122.0614	1.408000E-02
165.853	1.516000E-02
279.1967	9.929000E-03
391.668	7.578000E-03
513.99	5.875000E-03
661.65	4.927000E-03
898.021	3.727000E-03
1173.237	3.085000E-03
1332.501	2.683000E-03
1836.129	2.102000E-03

EQUATION 0-122 KEV

$$\begin{aligned}
 \text{LOG(EFF)} = & -6.654070\text{E+01} \\
 & + 2.583780\text{E+01} * \text{LOG(ENERGY)} \\
 & + -2.677550\text{E+00} * \text{LOG(ENERGY)}^2
 \end{aligned}$$

EQUATION 122-1836 KEV

$$\begin{aligned}
 \text{LOG(EFF)} = & -1.050740\text{E+02} \\
 & + 6.428950\text{E+01} * \text{LOG(ENERGY)} \\
 & + -1.503170\text{E+01} * \text{LOG(ENERGY)}^2 \\
 & + 1.533670\text{E+00} * \text{LOG(ENERGY)}^3 \\
 & + -5.838530\text{E-02} * \text{LOG(ENERGY)}^4
 \end{aligned}$$

GEA CALIBRATION RECORD

PROCEDURE LQ-508-003

DETECTOR: 2
 GEOMETRY CODE: 43
 GEOMETRY DECSRIPTION: 22 ML LIQUID, POS 3
 CALIBRATION DATE: 28-Sep-88
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	1.476000E-03
88.032	4.721000E-03
122.0614	6.589000E-03
165.853	6.613000E-03
279.1967	4.692000E-03
391.668	3.542000E-03
513.99	2.810000E-03
661.65	2.327000E-03
898.021	1.790000E-03
1173.237	1.437000E-03
1332.501	1.277000E-03
1836.129	9.824000E-04

EQUATION 0-165 KEV

$$\begin{aligned}\text{LOG(EFF)} = & -5.826830\text{E+01} \\ & + 2.165450\text{E+01} * \text{LOG(ENERGY)} \\ & + -2.198930\text{E+00} * \text{LOG(ENERGY)}^2\end{aligned}$$

EQUATION 165-1836 KEV

$$\begin{aligned}\text{LOG(EFF)} = & -2.233890\text{E+01} \\ & + 1.174520\text{E+01} * \text{LOG(ENERGY)} \\ & + -2.739550\text{E+00} * \text{LOG(ENERGY)}^2 \\ & + 2.655450\text{E-01} * \text{LOG(ENERGY)}^3 \\ & + -9.668420\text{E-03} * \text{LOG(ENERGY)}^4\end{aligned}$$

Single Shell Tank Calibration Record

ANALYTE: Mixed Isotope Standards

PROCEDURE: LQ-508-003

REVISION: A-3

INSTRUMENT: GEA Detector #3

PROPERTY NUMBER: 401934

TECHNOLOGIST: J. L. Anderson

PAYROLL NUMBER: 61413

DATE: July 2, 1989

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

COMMENTS:

DETECTOR: 3
 GEOMETRY CODE: 41
 GEOMETRY DESCRIPTION: 22 ML LIQUID, POS 1
 CALIBRATION DATE: 2-Jul-89
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.833765E-02
88.032	2.881764E-02
122.0614	2.756557E-02
165.853	2.270614E-02
279.1967	
391.668	1.285730E-02
513.99	
661.65	7.841011E-03
898.021	5.779292E-03
1173.237	4.773005E-03
1332.501	4.278530E-03
1836.129	3.371238E-03

EQUATION 0-165 KEV

$$\begin{aligned}
 \text{LOG(EFF)} = & -1.113845E+01 \\
 & + 3.484260E+00 * \text{LOG(ENERGY)} \\
 & + -3.990659E-01 * \text{LOG(ENERGY)}^2
 \end{aligned}$$

EQUATION 165-1836 KEV

$$\begin{aligned}
 \text{LOG(EFF)} = & -2.052334E+01 \\
 & + 9.121738E+00 * \text{LOG(ENERGY)} \\
 & + -1.553578E+00 * \text{LOG(ENERGY)}^2 \\
 & + 8.018036E-02 * \text{LOG(ENERGY)}^3
 \end{aligned}$$

GEA CALIBRATION RECORD

PROCEDURE LQ-508-003

DETECTOR: 3
 GEOMETRY CODE: 42
 GEOMETRY DESCRIPTION: 22 ML LIQUID, POS 2
 CALIBRATION DATE: 2-Jul-89
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	7.455306E-03
88.032	7.462748E-03
122.0614	7.578302E-03
165.853	6.965814E-03
279.1967	
391.668	3.596591E-03
513.99	
661.65	2.318396E-03
898.021	1.824191E-03
1173.237	1.461179E-03
1332.501	1.321243E-03
1836.129	1.011332E-03

EQUATION 0-165 KEV

$$\begin{aligned}\text{LOG(EFF)} = & -6.838496\text{E+00} \\ & + 8.819509\text{E-01} * \text{LOG(ENERGY)} \\ & + -9.970528\text{E-02} * \text{LOG(ENERGY)}^2\end{aligned}$$
EQUATION 165-1836 KEV

$$\begin{aligned}\text{LOG(EFF)} = & 3.082260\text{E-01} \\ & + -1.410839\text{E+00} * \text{LOG(ENERGY)} \\ & + 1.042898\text{E-01} * \text{LOG(ENERGY)}^2 \\ & + -5.874725\text{E-03} * \text{LOG(ENERGY)}^3\end{aligned}$$
GEA CALIBRATION RECORD**PROCEDURE LQ-508-003**

DETECTOR: 3
 GEOMETRY CODE: 43
 GEOMETRY DESCRIPTION: 22 ML LIQUID, POS 3
 CALIBRATION DATE: 2-Jul-89
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV)	EFFICIENCY (COUNTS/GAMMA)
59.536	2.020462E-03
88.032	1.924344E-03
122.0614	2.027231E-03
165.853	1.712371E-03
279.1967	
391.668	1.056509E-03
513.99	
661.65	7.115743E-04
898.021	5.243928E-04
1173.237	4.551585E-04
1332.501	4.223636E-04
1836.129	3.139091E-04

EQUATION 0-165 KEV

$$\begin{aligned}\text{LOG(EFF)} = & -5.300788\text{E+00} \\ & + -3.550643\text{E-01} * \text{LOG(ENERGY)} \\ & + 3.272635\text{E-02} * \text{LOG(ENERGY)}^2\end{aligned}$$
EQUATION 165-1836 KEV

$$\begin{aligned}\text{LOG(EFF)} = & -9.815549\text{E+00} \\ & + 2.402920\text{E+00} * \text{LOG(ENERGY)} \\ & + -4.428877\text{E-01} * \text{LOG(ENERGY)}^2 \\ & + 2.059131\text{E-02} * \text{LOG(ENERGY)}^3\end{aligned}$$

Single Shell Tank Calibration Record

ANALYTE: Mixed Isotope Standards

PROCEDURE: LQ-508-003

REVISION: A-3

INSTRUMENT: GEA Detector #4

PROPERTY NUMBER: 401934

TECHNOLOGIST: J. L. Anderson

PAYROLL NUMBER: 61413

DATE: September 1, 1989

CALIBRATION STANDARD ID: 56B40 D1

ANALYTE CONCENTRATION: N/A

TYPE OF CALIBRATION: Gamma Energy Analysis (Efficiency)

COMMENTS:

GEA CALIBRATION RECORD

PROCEDURE LQ-508-003

DETECTOR: 4
 GEOMETRY CODE: 41
 GEOMETRY DESCRIPTION: 22 ML LIQUID, POS 1
 CALIBRATION DATE: 1-Sep-89
 ANALYST(S): J. L. ANDERSON/M. R. DOWELL
 STANDARD ID: 56B40 D1

ENERGY (KEV) EFFICIENCY (COUNTS/GAMMA)

59.536	2.682446E-02
88.032	8.210956E-02
122.0614	1.118411E-01
165.853	1.066653E-01
279.1967	
391.668	5.704220E-02
513.99	
661.65	3.685958E-02
898.021	2.541629E-02
1173.237	2.161710E-02
1332.501	1.973393E-02
1836.129	1.484468E-02

EQUATION 0-165 KEV

$$\begin{aligned} \text{LOG(EFF)} = & -5.844056\text{E+01} \\ & + 2.310700\text{E+01} * \text{LOG(ENERGY)} \\ & + 2.371355\text{E+00} * \text{LOG(ENERGY)}^2 \end{aligned}$$

EQUATION 165-1836 KEV

$$\begin{aligned} \text{LOG(EFF)} = & -1.718967\text{E+01} \\ & + 8.164155\text{E+00} * \text{LOG(ENERGY)} \\ & + -1.304196\text{E+00} * \text{LOG(ENERGY)}^2 \\ & + 7.025985\text{E-02} * \text{LOG(ENERGY)}^3 \end{aligned}$$

GEA CALIBRATION RECORD

PROCEDURE LQ-508-003

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CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM WESTINGHOUSE HANFORD

27-AUG-90 10:12:00

A N A L Y S I S P A R A M E T E R S

MCA UNIT NUMBER: 1 / ADC UNIT NUMBER: 1.0
DETECTOR NUMBER: 4 / GEOMETRY NUMBER: 41
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD4885
ANALYZED BY: VR

SAMPLE DESCRIPTION: F129 SEGMENT F
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 5.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 10-JAN-90 AT 07:02:02

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3032. SECONDS
DEAD TIME: 1.06 %

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 26-DEC-89
EFFICIENCY CALIBRATION PERFORMED 1-SEP-89

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1	53.64	27.00	1.09	2713.	1439.	11.3	
1B		27.06			123.	34.3	
2	951.26	475.55	1.69	4680.	813.	25.0	CS-134
3C	1126.89	563.35	1.52	3130.	3613.	5.7	CS-134, EU-152
4C	1139.08	569.44	1.52	3058.	6581.	4.5	CS-134, BI-207
5	1209.84	604.81	1.58	3039.	41942.	1.0	CS-134
6	1323.69	661.73	1.64	1970.	65129.	0.8	CS-137
6B		661.35			379.	12.7	
7?	1591.95	795.86	1.72	1709.	30466.	1.5	CS-134
8?	1604.14	801.95	1.72	1656.	2943.	9.1	CS-134
9?	2335.95	1167.96	2.04	1036.	578.	28.6	CS-134
10?	2346.41	1173.19	2.04	916.	27276.	1.5	CO-60
11	2664.98	1332.57	2.28	257.	24755.	1.3	CO-60
12	2730.39	1365.30	2.46	111.	796.	8.2	CS-134
13	2801.12	1400.69	2.37	109.	399.	13.1	BI-214
14	2921.56	1460.96	2.47	90.	813.	7.9	K-40
14B		1460.80			854.	7.1	

ERROR QUOTATION AT 1.96 SIGMA
 PEAK CONFIDENCE LEVEL AT 85.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
 ? - MULTIPLET ANALYSIS CONVERGED BUT GFIT > 4
 B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0014
 BACKGROUND DESCRIPTION: BKG
 BACKGROUND COLLECT STARTED ON 8-SEP-89 AT 12:00:00
 BACKGROUND LIVE TIME: 3000. SECONDS

222-S COUNTING ROOM WESTINGHOUSE HANFORD

27-AUG-90 10:12:00

SAMPLE: F129 SEGMENT F

DATA COLLECTED ON 10-JAN-90 AT 07:02:02

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI			ENERGY COMPARISON (KEV)		
	MEASURED	ERROR	DECAY CORRECTED	ERROR	EXPECT	DIFF
AC-228	LLD<3.89E-01		LLD<3.89E-01		911.07	
AG-108M	LLD<8.41E-02		LLD<8.41E-02		433.94	
AG-110M	LLD<4.06E-01		LLD<4.06E-01		657.76	
AM-241	LLD<3.93E-01		LLD<3.93E-01		59.54	
AM-243	LLD<9.32E-02		LLD<9.32E-02		74.67	
AR-41	LLD<6.76E-02		LLD<6.76E-02		1293.64	
AU-198	LLD<8.50E-02		LLD<8.50E-02		411.80	
BA-133	LLD<1.05E-01		LLD<1.05E-01		356.02	
BA-139	LLD<2.09E-01		LLD<2.09E-01		165.85	
BA-140	LLD<3.11E-01		LLD<3.11E-01		537.27	
BA-141	LLD<2.03E-01		LLD<2.03E-01		190.23	
BE-7	LLD<8.10E-01		LLD<8.10E-01		477.59	
BI-207	LLD<8.03E-02		LLD<8.03E-02		569.70	
BI-212	LLD<1.09E+00		LLD<1.09E+00		727.27	
BI-214	LLD<6.01E-01		LLD<6.01E-01		609.32	
CD-109	LLD<1.30E+00		LLD<1.30E+00		88.03	
CE-139	LLD<4.73E-02		LLD<4.73E-02		165.85	
CE-141	LLD<7.07E-02		LLD<7.07E-02		145.44	
CEPR144	LLD<6.03E-01		LLD<6.03E-01		133.51	
CO-56	LLD<8.80E-02		LLD<8.80E-02		846.76	
CO-57	LLD<3.83E-02		LLD<3.83E-02		122.06	
CO-58	LLD<8.01E-02		LLD<8.01E-02		810.75	
CO-60	2.28E+01	+ -3.30E-01	2.28E+01	+ -3.30E-01	1332.50	0.07
					1173.24	-0.04
CR-51	LLD<5.78E-01		LLD<5.78E-01		320.09	
CS-134	2.08E+01	+ -3.56E-01	2.08E+01	+ -3.56E-01	795.84	0.02
					604.70	0.12
CS-136	LLD<7.79E-02		LLD<7.79E-02		818.51	
CS-137	3.74E+01	+ -4.12E-01	3.74E+01	+ -4.12E-01	661.65	0.08
CS-138	LLD<8.08E-02		LLD<8.08E-02		1435.86	
EU-152	LLD<2.08E-01		LLD<2.08E-01		1408.01	
EU-154	LLD<1.58E-01		LLD<1.58E-01		1274.45	
EU-155	LLD<1.65E-01		LLD<1.65E-01		105.31	
FE-59	LLD<1.99E-01		LLD<1.99E-01		1099.25	
HF-181	LLD<9.82E-02		LLD<9.82E-02		482.20	
HG-203	LLD<6.67E-02		LLD<6.67E-02		279.20	
I-131	LLD<8.12E-02		LLD<8.12E-02		364.48	
I-132	LLD<9.54E-02		LLD<9.54E-02		667.69	
I-133	LLD<8.96E-02		LLD<8.96E-02		529.69	
I-134	LLD<1.18E-01		LLD<1.18E-01		847.03	
I-135	LLD<2.16E-01		LLD<2.16E-01		1260.41	
K-40	LLD<9.13E-01		LLD<9.13E-01		1460.75	
KR-85	LLD<1.67E+01		LLD<1.67E+01		513.99	
KR-85M	LLD<4.95E-02		LLD<4.95E-02		151.17	
KR-87	LLD<1.81E-01		LLD<1.81E-01		402.58	
KR-89	LLD<2.57E+00		LLD<2.57E+00		220.90	
LA-140	LLD<3.10E-02		LLD<3.10E-02		1596.20	

LA-142	LLD<1.84E-01	LLD<1.84E-01	641.83
MN-54	LLD<8.70E-02	LLD<8.70E-02	834.83
MN-56	LLD<9.93E-02	LLD<9.93E-02	846.76
NA-22	LLD<5.24E-02	LLD<5.24E-02	1274.55
NA-24	LLD<7.27E-02	LLD<7.27E-02	1368.60
NB-94	LLD<6.95E-02	LLD<6.95E-02	702.63
NB-95	LLD<8.08E-02	LLD<8.08E-02	765.78
NB-97	LLD<5.79E-01	LLD<5.79E-01	657.92
NP-238	LLD<3.64E-01	LLD<3.64E-01	984.45
NP-239	LLD<3.80E-01	LLD<3.80E-01	277.60
PA-233	LLD<1.61E-01	LLD<1.61E-01	311.98
PA-234M	LLD<1.85E+01	LLD<1.85E+01	1001.03
PB-210	LLD<1.97E+00	LLD<1.97E+00	465.03
PB-212	LLD<1.30E-01	LLD<1.30E-01	239.00
PB-214	LLD<1.76E-01	LLD<1.76E-01	351.92
PO-210	LLD<7.29E+03	LLD<7.29E+03	804.00
PO-214	LLD<3.77E+03	LLD<3.77E+03	799.70
PO-216	LLD<6.39E+03	LLD<6.39E+03	804.90
PU-239	LLD<5.16E+02	LLD<5.16E+02	129.30
PU-241	LLD<1.85E+04	LLD<1.85E+04	148.57
RA-224	LLD<1.31E+00	LLD<1.31E+00	240.99
RA-226	LLD<1.31E+00	LLD<1.31E+00	186.10
RB-88	LLD<4.01E-01	LLD<4.01E-01	1836.00
RB-89	LLD<4.47E-01	LLD<4.47E-01	1031.88
RN-220	LLD<6.99E+01	LLD<6.99E+01	549.73
RU-103	LLD<8.31E-02	LLD<8.31E-02	497.08
RURH106	LLD<1.46E+00	LLD<1.46E+00	621.80
SB-124	LLD<2.01E-01	LLD<2.01E-01	602.72
SB-125	LLD<5.67E-01	LLD<5.67E-01	176.33
SC-46	LLD<1.10E-01	LLD<1.10E-01	1120.45
SE-75	LLD<9.00E-02	LLD<9.00E-02	264.66
SN-113	LLD<1.10E-01	LLD<1.10E-01	391.67
SR-85	LLD<7.34E-02	LLD<7.34E-02	513.99
SR-91	LLD<1.43E-01	LLD<1.43E-01	555.60
SR-92	LLD<4.88E-02	LLD<4.88E-02	1383.94
TA-182	LLD<2.99E-01	LLD<2.99E-01	1121.30
TC-99M	LLD<3.95E-02	LLD<3.95E-02	140.51
TE-123M	LLD<4.32E-02	LLD<4.32E-02	159.00
TE-125M	LLD<1.25E+01	LLD<1.25E+01	109.27
TE-132	LLD<5.77E-02	LLD<5.77E-02	228.16
TH-228	LLD<4.03E+00	LLD<4.03E+00	84.37
TL-208	LLD<9.94E-02	LLD<9.94E-02	583.14
U-235	LLD<7.27E-02	LLD<7.27E-02	185.71
U-237	LLD<2.34E-01	LLD<2.34E-01	208.00
W-187	LLD<2.38E-01	LLD<2.38E-01	685.74
XE-131M	LLD<1.97E+00	LLD<1.97E+00	163.98
XE-133	LLD<1.46E-01	LLD<1.46E-01	81.00
XE-133M	LLD<4.71E-01	LLD<4.71E-01	233.21
XE-135	LLD<5.38E-02	LLD<5.38E-02	249.79
XE-138	LLD<4.52E-01	LLD<4.52E-01	258.41
Y-88	LLD<3.78E-02	LLD<3.78E-02	1836.06
Y-91	LLD<2.46E+01	LLD<2.46E+01	1204.90
Y-91M	LLD<1.08E-01	LLD<1.08E-01	555.60
ZN-65	LLD<2.35E-01	LLD<2.35E-01	1115.55
ZR-95	LLD<1.36E-01	LLD<1.36E-01	756.73
ZR-97	LLD<7.81E-02	LLD<7.81E-02	743.33

TOTAL 8.10E+01 +-6.36E-01 8.10E+01 +-6.36E-01

STANDARD DEVIATION = 0.06

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.45E-09 UC/LI
TOTAL MEASURED ACTIVITY = 8.10E+01 (+-6.36E-01) UC/LI
% TECH. SPEC. = ***** (+-*****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
53.64	27.00	1316.	12.8	1.37E+03
951.26	475.55	813.	25.0	5.46E+00
1126.89	563.35	3613.	5.7	2.83E+01
1139.08	569.44	6581.	4.5	5.21E+01
1604.14	801.95	2943.	9.1	3.19E+01
2335.95	1167.96	578.	28.6	8.80E+00
2730.39	1365.30	796.	8.2	1.39E+01
2801.12	1400.69	399.	13.1	7.10E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.56	1460.96	813.	7.9	1.50E+01

*
*
* G A M M A S P E C T R U M A N A L Y S I S *
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* *

CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM WESTINGHOUSE HANFORD

27-AUG-90 09:55:27

A N A L Y S I S P A R A M E T E R S

MCA UNIT NUMBER: 2 / ADC UNIT NUMBER: 3.0
DETECTOR NUMBER: 3 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD3888
ANALYZED BY: DM

SAMPLE DESCRIPTION: F-308 SEGMENT-U
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 10-JAN-90 AT 09:24:49

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3003. SECONDS
DEAD TIME: 0.10 %

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 17-OCT-89
EFFICIENCY CALIBRATION PERFORMED 31-JUL-89

222-S COUNTING ROOM WESTINGHOUSE HANFORD

27-AUG-90 09:55:27

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1	2921.30	1460.75	1.81	32.	603.	8.6	K-40
1B		1460.58			611.	5.5	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0013
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 15-JAN-90 AT 11:00:00
BACKGROUND LIVE TIME: 7000. SECONDS

222-S COUNTING ROOM WESTINGHOUSE HANFORD

27-AUG-90 09:55:27

SAMPLE: F-308 SEGMENT-U

DATA COLLECTED ON 10-JAN-90 AT 09:24:49

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI			ENERGY COMPARISON (KEV)		
	MEASURED	ERROR	DECAY CORRECTED	ERROR	EXPECT	DIFF
AC-228	LLD<1.18E+00		LLD<1.18E+00		911.07	
AG-108M	LLD<1.95E-01		LLD<1.95E-01		433.94	
AG-110M	LLD<2.98E-01		LLD<2.98E-01		657.76	
AM-241	LLD<2.89E-01		LLD<2.89E-01		59.54	
AM-243	LLD<2.27E-01		LLD<2.27E-01		74.67	
AR-41	LLD<3.19E-01		LLD<3.19E-01		1293.64	
AU-198	LLD<1.82E-01		LLD<1.82E-01		411.80	
BA-133	LLD<3.07E-01		LLD<3.07E-01		356.02	
BA-139	LLD<7.16E-01		LLD<7.16E-01		165.85	
BA-140	LLD<8.17E-01		LLD<8.17E-01		537.27	
BA-141	LLD<7.54E-01		LLD<7.54E-01		190.23	
BE-7	LLD<1.74E+00		LLD<1.74E+00		477.59	
BI-207	LLD<1.90E-01		LLD<1.90E-01		569.70	
BI-212	LLD<3.10E+00		LLD<3.10E+00		727.27	
BI-214	LLD<6.11E-01		LLD<6.11E-01		609.32	
CD-109	LLD<3.62E+00		LLD<3.62E+00		88.03	
CE-139	LLD<1.62E-01		LLD<1.62E-01		165.85	
CE-141	LLD<2.83E-01		LLD<2.83E-01		145.44	
CEPR144	LLD<2.49E+00		LLD<2.49E+00		133.51	
CO-56	LLD<2.15E-01		LLD<2.15E-01		846.76	
CO-57	LLD<1.57E-01		LLD<1.57E-01		122.06	
CO-58	LLD<2.19E-01		LLD<2.19E-01		810.75	
CO-60	LLD<2.64E-01		LLD<2.64E-01		1332.50	
CR-51	LLD<1.62E+00		LLD<1.62E+00		320.09	
CS-134	LLD<2.57E-01		LLD<2.57E-01		795.84	
CS-136	LLD<2.05E-01		LLD<2.05E-01		818.51	
CS-137	LLD<3.20E-01		LLD<3.20E-01		661.65	
CS-138	LLD<4.38E-01		LLD<4.38E-01		1435.86	
EU-152	LLD<1.35E+00		LLD<1.35E+00		1408.01	
EU-154	LLD<7.68E-01		LLD<7.68E-01		1274.45	
EU-155	LLD<6.08E-01		LLD<6.08E-01		105.31	
FE-59	LLD<5.21E-01		LLD<5.21E-01		1099.25	
HF-181	LLD<2.30E-01		LLD<2.30E-01		482.20	
HG-203	LLD<1.85E-01		LLD<1.85E-01		279.20	
I-131	LLD<2.15E-01		LLD<2.15E-01		364.48	
I-132	LLD<2.06E-01		LLD<2.06E-01		667.69	
I-133	LLD<2.14E-01		LLD<2.14E-01		529.69	
I-134	LLD<3.02E-01		LLD<3.02E-01		847.03	
I-135	LLD<9.96E-01		LLD<9.96E-01		1260.41	
K-40	LLD<7.39E+00		LLD<7.39E+00		1460.75	
KR-85	LLD<5.58E+01		LLD<5.58E+01		513.99	
KR-85M	LLD<2.13E-01		LLD<2.13E-01		151.17	
KR-87	LLD<4.19E-01		LLD<4.19E-01		402.58	
KR-89	LLD<7.87E+00		LLD<7.87E+00		220.90	
LA-140	LLD<2.91E-01		LLD<2.91E-01		1596.20	
LA-142	LLD<4.85E-01		LLD<4.85E-01		641.83	
MN-54	LLD<2.31E-01		LLD<2.31E-01		834.83	

MN-56	LLD<2.43E-01	LLD<2.43E-01	846.76
NA-22	LLD<3.03E-01	LLD<3.03E-01	1274.55
NA-24	LLD<2.20E-01	LLD<2.20E-01	1368.60
NB-94	LLD<2.23E-01	LLD<2.23E-01	702.63
NB-95	LLD<2.03E-01	LLD<2.03E-01	765.78
NB-97	LLD<3.61E-01	LLD<3.61E-01	657.92
NP-238	LLD<9.29E-01	LLD<9.29E-01	984.45
NP-239	LLD<1.13E+00	LLD<1.13E+00	277.60
PA-233	LLD<4.34E-01	LLD<4.34E-01	311.98
PA-234M	LLD<4.11E+01	LLD<4.11E+01	1001.03
PB-210	LLD<4.80E+00	LLD<4.80E+00	465.03
PB-212	LLD<3.88E-01	LLD<3.88E-01	239.00
PB-214	LLD<6.20E-01	LLD<6.20E-01	351.92
PO-210	LLD<1.58E+04	LLD<1.58E+04	804.00
PO-214	LLD<2.01E+03	LLD<2.01E+03	799.70
PO-216	LLD<1.05E+04	LLD<1.05E+04	804.90
PU-239	LLD<2.07E+03	LLD<2.07E+03	129.30
PU-241	LLD<7.12E+04	LLD<7.12E+04	148.57
RA-224	LLD<4.28E+00	LLD<4.28E+00	240.99
RA-226	LLD<4.43E+00	LLD<4.43E+00	186.10
RB-88	LLD<2.61E+00	LLD<2.61E+00	1836.00
RB-89	LLD<1.19E+00	LLD<1.19E+00	1031.88
RN-220	LLD<1.84E+02	LLD<1.84E+02	549.73
RU-103	LLD<2.00E-01	LLD<2.00E-01	497.08
RURH106	LLD<3.92E+00	LLD<3.92E+00	621.80
SB-124	LLD<1.84E-01	LLD<1.84E-01	602.72
SB-125	LLD<1.98E+00	LLD<1.98E+00	176.33
SC-46	LLD<3.85E-01	LLD<3.85E-01	1120.45
SE-75	LLD<2.71E-01	LLD<2.71E-01	264.66
SN-113	LLD<2.69E-01	LLD<2.69E-01	391.67
SR-85	LLD<2.45E-01	LLD<2.45E-01	513.99
SR-91	LLD<3.54E-01	LLD<3.54E-01	555.60
SR-92	LLD<4.47E-01	LLD<4.47E-01	1383.94
TA-182	LLD<8.15E-01	LLD<8.15E-01	1121.30
TC-99M	LLD<1.58E-01	LLD<1.58E-01	140.51
TE-123M	LLD<1.57E-01	LLD<1.57E-01	159.00
TE-125M	LLD<4.71E+01	LLD<4.71E+01	109.27
TE-132	LLD<1.81E-01	LLD<1.81E-01	228.16
TH-228	LLD<9.83E+00	LLD<9.83E+00	84.37
TL-208	LLD<3.02E-01	LLD<3.02E-01	583.14
U-235	LLD<2.71E-01	LLD<2.71E-01	185.71
U-237	LLD<7.54E-01	LLD<7.54E-01	208.00
W-187	LLD<7.58E-01	LLD<7.58E-01	685.74
XE-131M	LLD<6.93E+00	LLD<6.93E+00	163.98
XE-133	LLD<3.12E-01	LLD<3.12E-01	81.00
XE-133M	LLD<1.60E+00	LLD<1.60E+00	233.21
XE-135	LLD<1.71E-01	LLD<1.71E-01	249.79
XE-138	LLD<1.38E+00	LLD<1.38E+00	258.41
Y-88	LLD<2.48E-01	LLD<2.48E-01	1836.06
Y-91	LLD<9.78E+01	LLD<9.78E+01	1204.90
Y-91M	LLD<2.67E-01	LLD<2.67E-01	555.60
ZN-65	LLD<6.72E-01	LLD<6.72E-01	1115.55
ZR-95	LLD<3.79E-01	LLD<3.79E-01	756.73
ZR-97	LLD<2.26E-01	LLD<2.26E-01	743.33
TOTAL	0.00E-01 +-0.00E-01	0.00E-01 +-0.00E-01	

ERROR QUOTATION AT 1.96 SIGMA
 LLD CONFIDENCE LEVEL AT 95.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
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2921.30	1460.75	603.	8.6	1.64E+02
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* G A M M A S P E C T R U M A N A L Y S I S *
* *

CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM WESTINGHOUSE HANFORD

28-SEP-90 12:03:27

A N A L Y S I S P A R A M E T E R S

MCA UNIT NUMBER: 2 / ADC UNIT NUMBER: 3.0
DETECTOR NUMBER: 3 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 95.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD3886
ANALYZED BY: VR

SAMPLE DESCRIPTION: F130 SEGMENT G
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 1.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 10-JAN-90 AT 07:00:59

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3003. SECONDS
DEAD TIME: 0.10 %

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 17-OCT-89
EFFICIENCY CALIBRATION PERFORMED 31-JUL-89

222-S COUNTING ROOM WESTINGHOUSE HANFORD

28-SEP-90 12:03:27

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1C	1218.06	609.06	1.20	84.	126.	31.5	BI-214,
1B		609.19			122.	21.0	RU-103
2	1323.17	661.58	1.49	111.	949.	7.2	CS-137
2B		661.41			81.	28.8	
3	2921.07	1460.63	1.75	59.	549.	9.7	K-40
3B		1460.58			611.	5.5	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 95.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0013
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 15-JAN-90 AT 11:00:00
BACKGROUND LIVE TIME: 7000. SECONDS

SAMPLE: F130 SEGMENT G

DATA COLLECTED ON 10-JAN-90 AT 07:00:59

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI			ENERGY COMPARISON	
	MEASURED	ERROR	DECAY CORRECTED	ERROR	(KEV) EXPECT
AC-228	LLD<1.27E+01		LLD<1.27E+01		911.07
AG-108M	LLD<2.12E+00		LLD<2.12E+00		433.94
AG-110M	LLD<7.29E+00		LLD<7.29E+00		657.76
AM-241	LLD<3.50E+00		LLD<3.50E+00		59.54
AM-243	LLD<2.49E+00		LLD<2.49E+00		74.67
AR-41	LLD<3.54E+00		LLD<3.54E+00		1293.64
AU-198	LLD<1.89E+00		LLD<1.89E+00		411.80
BA-133	LLD<3.03E+00		LLD<3.03E+00		356.02
BA-139	LLD<7.38E+00		LLD<7.38E+00		165.85
BA-140	LLD<7.88E+00		LLD<7.88E+00		537.27
BA-141	LLD<7.99E+00		LLD<7.99E+00		190.23
BE-7	LLD<1.97E+01		LLD<1.97E+01		477.59
BI-207	LLD<2.05E+00		LLD<2.05E+00		569.70
BI-212	LLD<3.59E+01		LLD<3.59E+01		727.27
BI-214	LLD<6.55E+00		LLD<6.55E+00		609.32
CD-109	LLD<3.93E+01		LLD<3.93E+01		88.03
CE-139	LLD<1.67E+00		LLD<1.67E+00		165.85
CE-141	LLD<2.97E+00		LLD<2.97E+00		145.44
CEPR144	LLD<2.54E+01		LLD<2.54E+01		133.51
CO-56	LLD<2.44E+00		LLD<2.44E+00		846.76
CO-57	LLD<1.72E+00		LLD<1.72E+00		122.06
CO-58	LLD<2.02E+00		LLD<2.02E+00		810.75
CO-60	LLD<2.64E+00		LLD<2.64E+00		1332.50
CR-51	LLD<1.70E+01		LLD<1.70E+01		320.09
CS-134	LLD<2.80E+00		LLD<2.80E+00		795.84
CS-136	LLD<2.14E+00		LLD<2.14E+00		818.51
CS-137	3.96E+01	+ -3.38E+00	3.96E+01	+ -3.38E+00	661.65 -0.07
CS-138	LLD<3.65E+00		LLD<3.65E+00		1435.86
EU-152	LLD<1.28E+01		LLD<1.28E+01		1408.01
EU-154	LLD<9.35E+00		LLD<9.35E+00		1274.45
EU-155	LLD<6.35E+00		LLD<6.35E+00		105.31
FE-59	LLD<4.68E+00		LLD<4.68E+00		1099.25
HF-181	LLD<2.45E+00		LLD<2.45E+00		482.20
HG-203	LLD<2.04E+00		LLD<2.04E+00		279.20
I-131	LLD<2.30E+00		LLD<2.30E+00		364.48
I-132	LLD<2.86E+00		LLD<2.86E+00		667.69
I-133	LLD<2.11E+00		LLD<2.11E+00		529.69
I-134	LLD<3.63E+00		LLD<3.63E+00		847.03
I-135	LLD<1.19E+01		LLD<1.19E+01		1260.41
K-40	LLD<7.70E+01		LLD<7.70E+01		1460.75
KR-85	LLD<6.00E+02		LLD<6.00E+02		513.99
KR-85M	LLD<2.26E+00		LLD<2.26E+00		151.17
KR-87	LLD<4.82E+00		LLD<4.82E+00		402.58
KR-89	LLD<8.61E+01		LLD<8.61E+01		220.90
LA-140	LLD<1.78E+00		LLD<1.78E+00		1596.20
LA-142	LLD<4.64E+00		LLD<4.64E+00		641.83
MN-54	LLD<2.40E+00		LLD<2.40E+00		834.83

MN-56	LLD<2.76E+00	LLD<2.76E+00	846.76
NA-22	LLD<3.67E+00	LLD<3.67E+00	1274.55
NA-24	LLD<2.29E+00	LLD<2.29E+00	1368.60
NB-94	LLD<2.23E+00	LLD<2.23E+00	702.63
NB-95	LLD<2.20E+00	LLD<2.20E+00	765.78
NB-97	LLD<8.84E+00	LLD<8.84E+00	657.92
NP-237	LLD<1.05E+01	LLD<1.05E+01	86.50
NP-238	LLD<9.07E+00	LLD<9.07E+00	984.45
NP-239	LLD<1.20E+01	LLD<1.20E+01	277.60
PA-233	LLD<4.46E+00	LLD<4.46E+00	311.98
PA-234M	LLD<5.07E+02	LLD<5.07E+02	1001.03
PB-210	LLD<5.18E+01	LLD<5.18E+01	465.03
PB-212	LLD<4.30E+00	LLD<4.30E+00	239.00
PB-214	LLD<6.49E+00	LLD<6.49E+00	351.92
PO-210	LLD<1.81E+05	LLD<1.81E+05	804.00
PO-214	LLD<2.28E+04	LLD<2.28E+04	799.70
PO-216	LLD<1.24E+05	LLD<1.24E+05	804.90
PU-239	LLD<2.25E+04	LLD<2.25E+04	129.30
PU-241	LLD<7.42E+05	LLD<7.42E+05	148.57
RA-224	LLD<4.53E+01	LLD<4.53E+01	240.99
RA-226	LLD<4.59E+01	LLD<4.59E+01	186.10
RB-88	LLD<2.80E+01	LLD<2.80E+01	1836.00
RB-89	LLD<1.21E+01	LLD<1.21E+01	1031.88
RN-220	LLD<1.91E+03	LLD<1.91E+03	549.73
RU-103	LLD<2.10E+00	LLD<2.10E+00	497.08
RURH106	LLD<3.92E+01	LLD<3.92E+01	621.80
SB-124	LLD<2.06E+00	LLD<2.06E+00	602.72
SB-125	LLD<2.13E+01	LLD<2.13E+01	176.33
SC-46	LLD<4.25E+00	LLD<4.25E+00	1120.45
SE-75	LLD<2.91E+00	LLD<2.91E+00	264.66
SN-113	LLD<2.91E+00	LLD<2.91E+00	391.67
SR-85	LLD<2.63E+00	LLD<2.63E+00	513.99
SR-91	LLD<3.64E+00	LLD<3.64E+00	555.60
SR-92	LLD<3.70E+00	LLD<3.70E+00	1383.94
TA-182	LLD<8.36E+00	LLD<8.36E+00	1121.30
TC-99M	LLD<1.72E+00	LLD<1.72E+00	140.51
TE-123M	LLD<1.65E+00	LLD<1.65E+00	159.00
TE-125M	LLD<5.16E+02	LLD<5.16E+02	109.27
TE-132	LLD<1.98E+00	LLD<1.98E+00	228.16
TH-228	LLD<1.11E+02	LLD<1.11E+02	84.37
TL-208	LLD<3.19E+00	LLD<3.19E+00	583.14
U-235	LLD<2.88E+00	LLD<2.88E+00	185.71
U-237	LLD<7.76E+00	LLD<7.76E+00	208.00
W-187	LLD<7.81E+00	LLD<7.81E+00	685.74
XE-131M	LLD<7.28E+01	LLD<7.28E+01	163.98
XE-133	LLD<3.55E+00	LLD<3.55E+00	81.00
XE-133M	LLD<1.69E+01	LLD<1.69E+01	233.21
XE-135	LLD<1.95E+00	LLD<1.95E+00	249.79
XE-138	LLD<1.45E+01	LLD<1.45E+01	258.41
Y-88	LLD<2.66E+00	LLD<2.66E+00	1836.06
Y-91	LLD<8.90E+02	LLD<8.90E+02	1204.90
Y-91M	LLD<2.75E+00	LLD<2.75E+00	555.60
ZN-65	LLD<7.15E+00	LLD<7.15E+00	1115.55
ZR-95	LLD<3.93E+00	LLD<3.93E+00	756.73
ZR-97	LLD<2.14E+00	LLD<2.14E+00	743.33

TOTAL 3.96E+01 + -3.38E+00 3.96E+01 + -3.38E+00

E BAR = ***** MEV/DISINTEGRATION

MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI

TOTAL MEASURED ACTIVITY = 3.96E+01 (+-3.38E+00) UC/LI
% TECH. SPEC. = ***** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 95.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1218.06	609.06	126.	31.5	1.69E+01
2921.07	1460.63	549.	9.7	1.50E+02

GAMMA SPECTRUM ANALYSIS

CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM

28-SEP-90 12:07:54

ANALYSIS PARAMETERS

MCA UNIT NUMBER: 1 / ADC UNIT NUMBER: 2.0
DETECTOR NUMBER: 2 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD2747
ANALYZED BY: VR

SAMPLE DESCRIPTION: F131 SEGMENT H
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 1.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSTS LIBRARY FILE: AN1000

COLLECT STARTED ON 10-JAN-90 AT 07:03:07

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3001. SECONDS
DEAD TIME: 0.03 %

DECAYED TO 0.00000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 17-MAR-89
EFFICIENCY CALIBRATION PERFORMED 21-OCT-88

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1	1324.42	661.82	1.67	43.	1594.	5.1	CS-137
1B		661.85			36.	13.9	
2	2921.85	1460.47	2.31	4.	170.	15.6	K-40
2B		1460.85			156.	3.8	
3	3527.46	1763.27	0.67	4.	21.	55.1	BI-214
3B		1764.55			14.	17.5	

ERROR QUOTATION AT 1.96 SIGMA
PEAK CONFIDENCE LEVEL AT 85.0%

B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0012
BACKGROUND DESCRIPTION: BKG
BACKGROUND COLLECT STARTED ON 30-AUG-88 AT 16:46:00
BACKGROUND LIVE TIME: 60000. SECONDS

SAMPLE: F131 SEGMENT H

DATA COLLECTED ON 10-JAN-90 AT 07:03:07

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI			ENERGY COMPARISON		
	MEASURED	ERROR	DECAY CORRECTED	ERROR	(KEV) EXPECT	DIFF
AC-228	LLD<1.88E+00		LLD<1.88E+00		911.07	
AG-108M	LLD<5.17E-01		LLD<5.17E-01		433.94	
AG-110M	LLD<2.85E+00		LLD<2.85E+00		657.76	
AM-241	LLD<3.50E+00		LLD<3.50E+00		59.54	
AM-243	LLD<8.89E-01		LLD<8.89E-01		74.67	
AR-41	LLD<6.58E-01		LLD<6.58E-01		1293.64	
AU-198	LLD<4.67E-01		LLD<4.67E-01		411.80	
BA-133	LLD<6.03E-01		LLD<6.03E-01		356.02	
BA-139	LLD<1.66E+00		LLD<1.66E+00		165.85	
BA-140	LLD<1.85E+00		LLD<1.85E+00		537.27	
BA-141	LLD<1.63E+00		LLD<1.63E+00		190.23	
BE-7	LLD<4.51E+00		LLD<4.51E+00		477.59	
BI-207	LLD<4.43E-01		LLD<4.43E-01		569.70	
BI-212	LLD<7.56E+00		LLD<7.56E+00		727.27	
BI-214	LLD<1.07E+00		LLD<1.07E+00		609.32	
CD-109	LLD<1.23E+01		LLD<1.23E+01		88.03	
CE-139	LLD<3.76E-01		LLD<3.76E-01		165.85	
CE-141	LLD<6.86E-01		LLD<6.86E-01		145.44	
CEPR144	LLD<5.02E+00		LLD<5.02E+00		133.51	
CO-56	LLD<4.63E-01		LLD<4.63E-01		846.76	
CO-57	LLD<3.20E-01		LLD<3.20E-01		122.06	
CO-58	LLD<4.48E-01		LLD<4.48E-01		810.75	
CO-60	LLD<6.85E-01		LLD<6.85E-01		1332.50	
CR-51	LLD<3.47E+00		LLD<3.47E+00		320.09	
CS-134	LLD<4.79E-01		LLD<4.79E-01		795.84	
CS-136	LLD<5.19E-01		LLD<5.19E-01		818.51	
CS-137	3.37E+01	+1.80E+00	3.37E+01	+1.80E+00	661.65	0.17
CS-138	LLD<1.25E+00		LLD<1.25E+00		1435.86	
EU-152	LLD<1.90E+00		LLD<1.90E+00		1408.01	
EU-154	LLD<1.56E+00		LLD<1.56E+00		1274.45	
EU-155	LLD<1.67E+00		LLD<1.67E+00		105.31	
FE-59	LLD<8.23E-01		LLD<8.23E-01		1099.25	
HF-181	LLD<6.07E-01		LLD<6.07E-01		482.20	
HG-203	LLD<3.86E-01		LLD<3.86E-01		279.20	
I-131	LLD<5.10E-01		LLD<5.10E-01		364.48	
I-132	LLD<1.65E+00		LLD<1.65E+00		667.69	
I-133	LLD<4.58E-01		LLD<4.58E-01		529.69	
I-134	LLD<6.88E-01		LLD<6.88E-01		847.03	
I-135	LLD<2.14E+00		LLD<2.14E+00		1260.41	
K-40	LLD<9.88E+00		LLD<9.88E+00		1460.75	
KR-85	LLD<1.16E+02		LLD<1.16E+02		513.99	
KR-85M	LLD<4.02E-01		LLD<4.02E-01		151.17	
KR-87	LLD<9.25E-01		LLD<9.25E-01		402.58	
KR-89	LLD<1.73E+01		LLD<1.73E+01		220.90	
LA-140	LLD<3.55E-01		LLD<3.55E-01		1596.20	
LA-142	LLD<1.09E+00		LLD<1.09E+00		641.83	
MN-54	LLD<3.94E-01		LLD<3.94E-01		834.83	

MN-56	LLD<5.22E-01	LLD<5.22E-01	846.76
NA-22	LLD<5.53E-01	LLD<5.53E-01	1274.55
NA-24	LLD<3.76E-01	LLD<3.76E-01	1368.60
NB-94	LLD<3.47E-01	LLD<3.47E-01	702.63
NB-95	LLD<4.61E-01	LLD<4.61E-01	765.78
NB-97	LLD<3.24E+00	LLD<3.24E+00	657.92
NP-237	LLD<3.45E+00	LLD<3.45E+00	86.50
NP-238	LLD<1.67E+00	LLD<1.67E+00	984.45
NP-239	LLD<2.40E+00	LLD<2.40E+00	277.60
PA-233	LLD<1.04E+00	LLD<1.04E+00	311.98
PA-234M	LLD<8.46E+01	LLD<8.46E+01	1001.03
PB-210	LLD<1.34E+01	LLD<1.34E+01	465.03
PB-212	LLD<8.32E-01	LLD<8.32E-01	239.00
PB-214	LLD<1.08E+00	LLD<1.08E+00	351.92
PO-210	LLD<3.42E+04	LLD<3.42E+04	804.00
PO-214	LLD<4.15E+03	LLD<4.15E+03	799.70
PO-216	LLD<1.71E+04	LLD<1.71E+04	804.90
PU-239	LLD<4.77E+03	LLD<4.77E+03	129.30
PU-241	LLD<1.52E+05	LLD<1.52E+05	148.57
RA-224	LLD<7.74E+00	LLD<7.74E+00	240.99
RA-226	LLD<8.21E+00	LLD<8.21E+00	186.10
RB-88	LLD<5.17E-01	LLD<5.17E-01	1836.00
RB-89	LLD<2.38E+00	LLD<2.38E+00	1031.88
RN-220	LLD<3.81E+02	LLD<3.81E+02	549.73
RU-103	LLD<4.54E-01	LLD<4.54E-01	497.08
RURH106	LLD<8.46E+00	LLD<8.46E+00	621.80
SB-124	LLD<4.65E-01	LLD<4.65E-01	602.72
SB-125	LLD<4.42E+00	LLD<4.42E+00	176.33
SC-46	LLD<6.02E-01	LLD<6.02E-01	1120.45
SE-75	LLD<6.15E-01	LLD<6.15E-01	264.66
SN-113	LLD<6.27E-01	LLD<6.27E-01	391.67
SR-85	LLD<5.08E-01	LLD<5.08E-01	513.99
SR-91	LLD<7.17E-01	LLD<7.17E-01	555.60
SR-92	LLD<4.81E-01	LLD<4.81E-01	1383.94
TA-182	LLD<1.38E+00	LLD<1.38E+00	1121.30
TC-99M	LLD<3.39E-01	LLD<3.39E-01	140.51
TE-123M	LLD<3.55E-01	LLD<3.55E-01	159.00
TE-125M	LLD<1.11E+02	LLD<1.11E+02	109.27
TE-132	LLD<3.49E-01	LLD<3.49E-01	228.16
TH-228	LLD<4.23E+01	LLD<4.23E+01	84.37
TL-208	LLD<5.12E-01	LLD<5.12E-01	583.14
U-235	LLD<5.47E-01	LLD<5.47E-01	185.71
U-237	LLD<1.50E+00	LLD<1.50E+00	208.00
W-187	LLD<1.45E+00	LLD<1.45E+00	685.74
XE-131M	LLD<1.63E+01	LLD<1.63E+01	163.98
XE-133	LLD<1.32E+00	LLD<1.32E+00	81.00
XE-133M	LLD<3.12E+00	LLD<3.12E+00	233.21
XE-135	LLD<3.90E-01	LLD<3.90E-01	249.79
XE-138	LLD<2.93E+00	LLD<2.93E+00	258.41
Y-88	LLD<4.90E-02	LLD<4.90E-02	1836.06
Y-91	LLD<1.60E+02	LLD<1.60E+02	1204.90
Y-91M	LLD<5.42E-01	LLD<5.42E-01	555.60
ZN-65	LLD<1.42E+00	LLD<1.42E+00	1115.55
ZR-95	LLD<8.20E-01	LLD<8.20E-01	756.73
ZR-97	LLD<4.90E-01	LLD<4.90E-01	743.33
TOTAL	3.37E+01 +-1.80E+00	3.37E+01 +-1.80E+00	

EBAR = ***** MEV/DISINTEGRATION

MAXIMUM PERMISSABLE ACTIVITY = 1.16E-08 UC/LI

TOTAL MEASURED ACTIVITY = 3.37E+01 (+-1.80E+00) UC/LI
% TECH. SPEC. = ***** (+-*****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

ALL DETECTED PEAKS WERE USED IN THE ANALYSIS

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.85	1460.47	170.	15.6	2.22E+01
3527.46	1763.27	21.	55.1	3.19E+00

CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM

27-AUG-90 09:32:44

ANALYSIS PARAMETERS

MCA UNIT NUMBER: 2 / ADC UNIT NUMBER: 1.0
DETECTOR NUMBER: 1 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD1009
ANALYZED BY: DM

SAMPLE DESCRIPTION: F-296 SEGMENT-I
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 1.0000E+00
STANDARD SIZE: 1.0000E+00 EA
ANALYSIS LIBRARY FILE: ANL000

COLLECT STARTED ON 10-JAN-90 AT 09:18:56

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3002. SECONDS
DEAD TIME: 0.07 %

DECAYED TO 0. DAYS. 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 23-NOV-89
EFFICIENCY CALIBRATION PERFORMED 2-MAR-89

222-S COUNTING ROOM

27-AUG-90 09:32:44

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1C	1126.55	562.75	1.40	158.	198.	21.1	CS-134, EU-152
2C	1138.99	568.97	1.40	143.	321.	18.3	CS-134, BI-207
3C	1209.70	604.31	1.41	135.	1733.	5.8	CS-134
4C	1218.83	608.87	1.41	126.	36.	33.0	BI-214, RU-103
5	1323.55	661.22	1.57	105.	3132.	3.6	CS-137
5B		661.82			35.	46.4	
6C	1591.90	795.38	1.54	68.	1260.	6.4	CS-134
7C	1604.08	801.47	1.54	70.	118.	13.7	CS-134
8	2346.30	1172.70	1.78	66.	1128.	6.2	CO-60
9	2664.77	1332.06	1.93	7.	1107.	5.9	CO-60
10	2730.32	1364.87	2.34	11.	31.	49.8	CS-134
11	2921.09	1460.35	1.56	5.	166.	15.8	K-40
11B		1461.77			182.	11.2	

ERROR QUOTATION AT 1.96 SIGMA
 PEAK CONFIDENCE LEVEL AT 85.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
 B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0011

BACKGROUND DESCRIPTION: BK0011

BACKGROUND COLLECT STARTED ON 10-JAN-85 AT 12:00:00

BACKGROUND LIVE TIME: 6000. SECONDS

222-S COUNTING ROOM

27-AUG-90 09:32:44

SAMPLE: F-296 SEGMENT-I

DATA COLLECTED ON 10-JAN-90 AT 09:18:56

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI			ENERGY COMPARISON	
	MEASURED	ERROR	DECAY CORRECTED	ERROR	(KEV) EXPECT
AC-228	LLD<2.18E-01		LLD<2.18E-01		911.07
AG-108M	LLD<6.07E-02		LLD<6.07E-02		433.94
AG-110M	LLD<2.70E-01		LLD<2.70E-01		657.76
AM-241	LLD<2.65E-01		LLD<2.65E-01		59.54
AM-243	LLD<6.45E-02		LLD<6.45E-02		74.67
AR-41	LLD<3.67E-02		LLD<3.67E-02		1293.64
AU-198	LLD<5.20E-02		LLD<5.20E-02		411.80
BA-133	LLD<8.08E-02		LLD<8.08E-02		356.02
BA-139	LLD<1.65E-01		LLD<1.65E-01		165.85
BA-140	LLD<2.00E-01		LLD<2.00E-01		537.27
BA-141	LLD<1.61E-01		LLD<1.61E-01		190.23
BE-7	LLD<5.10E-01		LLD<5.10E-01		477.59
BI-207	LLD<5.12E-02		LLD<5.12E-02		569.70
BI-212	LLD<6.79E-01		LLD<6.79E-01		727.27
BI-214	LLD<2.38E-01		LLD<2.38E-01		609.32
CD-109	LLD<1.03E+00		LLD<1.03E+00		88.03
CE-139	LLD<3.73E-02		LLD<3.73E-02		165.85
CE-141	LLD<5.54E-02		LLD<5.54E-02		145.44
CEPR144	LLD<4.71E-01		LLD<4.71E-01		133.51
CO-56	LLD<5.17E-02		LLD<5.17E-02		846.76
CO-57	LLD<3.12E-02		LLD<3.12E-02		122.06
CO-58	LLD<5.26E-02		LLD<5.26E-02		810.75
CO-60	2.63E+00	+ -1.59E-01	2.63E+00	+ -1.59E-01	1332.50 -0.44
					1173.24 -0.54
CR-51	LLD<4.26E-01		LLD<4.26E-01		320.09
CS-134	2.27E+00	+ -1.49E-01	2.27E+00	+ -1.49E-01	795.84 -0.47
					604.70 -0.39
CS-136	LLD<4.99E-02		LLD<4.99E-02		818.51
CS-137	4.81E+00	+ -1.88E-01	4.81E+00	+ -1.88E-01	661.65 -0.43
CS-138	LLD<6.42E-02		LLD<6.42E-02		1435.86
EU-152	LLD<1.30E-01		LLD<1.30E-01		1408.01
EU-154	LLD<9.67E-02		LLD<9.67E-02		1274.45
EU-155	LLD<1.22E-01		LLD<1.22E-01		105.31
FE-59	LLD<1.11E-01		LLD<1.11E-01		1099.25
HF-181	LLD<5.98E-02		LLD<5.98E-02		482.20
HG-203	LLD<4.99E-02		LLD<4.99E-02		279.20
I-131	LLD<6.21E-02		LLD<6.21E-02		364.48
I-132	LLD<5.81E-02		LLD<5.81E-02		667.69
I-133	LLD<5.73E-02		LLD<5.73E-02		529.69
I-134	LLD<7.22E-02		LLD<7.22E-02		847.03
I-135	LLD<1.49E-01		LLD<1.49E-01		1260.41
K-40	LLD<9.06E-01		LLD<9.06E-01		1460.75
KR-85	LLD<1.31E+01		LLD<1.31E+01		513.99
KR-85M	LLD<3.55E-02		LLD<3.55E-02		151.17
KR-87	LLD<1.31E-01		LLD<1.31E-01		402.58
KR-89	LLD<2.02E+00		LLD<2.02E+00		220.90
LA-140	LLD<3.91E-02		LLD<3.91E-02		1596.20

LA-142	LLD<1.28E-01	LLD<1.28E-01	641.83
MN-54	LLD<5.15E-02	LLD<5.15E-02	834.83
MN-56	LLD<5.83E-02	LLD<5.83E-02	846.76
NA-22	LLD<3.24E-02	LLD<3.24E-02	1274.55
NA-24	LLD<5.26E-02	LLD<5.26E-02	1368.60
NB-94	LLD<4.51E-02	LLD<4.51E-02	702.63
NB-95	LLD<4.59E-02	LLD<4.59E-02	765.78
NB-97	LLD<3.27E-01	LLD<3.27E-01	657.92
NP-238	LLD<1.94E-01	LLD<1.94E-01	984.45
NP-239	LLD<2.84E-01	LLD<2.84E-01	277.60
PA-233	LLD<1.19E-01	LLD<1.19E-01	311.98
PA-234M	LLD<1.01E+01	LLD<1.01E+01	1001.03
PB-210	LLD<1.41E+00	LLD<1.41E+00	465.03
PB-212	LLD<9.29E-02	LLD<9.29E-02	239.00
PB-214	LLD<1.31E-01	LLD<1.31E-01	351.92
PO-210	LLD<5.05E+03	LLD<5.05E+03	804.00
PO-214	LLD<1.93E+03	LLD<1.93E+03	799.70
PO-216	LLD<4.01E+03	LLD<4.01E+03	804.90
PU-239	LLD<4.03E+02	LLD<4.03E+02	129.30
PU-241	LLD<1.49E+04	LLD<1.49E+04	148.57
RA-224	LLD<9.95E-01	LLD<9.95E-01	240.99
RA-226	LLD<8.94E-01	LLD<8.94E-01	186.10
RB-88	LLD<3.69E-02	LLD<3.69E-02	1836.00
RB-89	LLD<2.54E-01	LLD<2.54E-01	1031.88
RN-220	LLD<4.40E+01	LLD<4.40E+01	549.73
RU-103	LLD<5.29E-02	LLD<5.29E-02	497.08
RURH106	LLD<8.84E-01	LLD<8.84E-01	621.80
SB-124	LLD<6.69E-02	LLD<6.69E-02	602.72
SB-125	LLD<4.61E-01	LLD<4.61E-01	176.33
SC-46	LLD<5.84E-02	LLD<5.84E-02	1120.45
SE-75	LLD<6.48E-02	LLD<6.48E-02	264.66
SN-113	LLD<7.31E-02	LLD<7.31E-02	391.67
SR-85	LLD<5.75E-02	LLD<5.75E-02	513.99
SR-91	LLD<9.13E-02	LLD<9.13E-02	555.60
SR-92	LLD<2.99E-02	LLD<2.99E-02	1383.94
TA-182	LLD<1.52E-01	LLD<1.52E-01	1121.30
TC-99M	LLD<3.11E-02	LLD<3.11E-02	140.51
TE-123M	LLD<3.60E-02	LLD<3.60E-02	159.00
TE-125M	LLD<8.79E+00	LLD<8.79E+00	109.27
TE-132	LLD<4.28E-02	LLD<4.28E-02	228.16
TH-228	LLD<3.13E+00	LLD<3.13E+00	84.37
TL-208	LLD<6.31E-02	LLD<6.31E-02	583.14
U-235	LLD<5.90E-02	LLD<5.90E-02	185.71
U-237	LLD<1.67E-01	LLD<1.67E-01	208.00
W-187	LLD<1.59E-01	LLD<1.59E-01	685.74
XE-131M	LLD<1.58E+00	LLD<1.58E+00	163.98
XE-133	LLD<1.11E-01	LLD<1.11E-01	81.00
XE-133M	LLD<3.83E-01	LLD<3.83E-01	233.21
XE-135	LLD<4.23E-02	LLD<4.23E-02	249.79
XE-138	LLD<3.23E-01	LLD<3.23E-01	258.41
Y-88	LLD<3.50E-03	LLD<3.50E-03	1836.06
Y-91	LLD<1.32E+01	LLD<1.32E+01	1204.90
Y-91M	LLD<6.90E-02	LLD<6.90E-02	555.60
ZN-65	LLD<1.33E-01	LLD<1.33E-01	1115.55
ZR-95	LLD<9.94E-02	LLD<9.94E-02	756.73
ZR-97	LLD<4.96E-02	LLD<4.96E-02	743.33

TOTAL 9.71E+00 +-2.87E-01 9.71E+00 +-2.87E-01

STANDARD DEVIATION = 0.05

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.53E-09 UC/LI
TOTAL MEASURED ACTIVITY = 9.71E+00 (+-2.87E-01) UC/LI
% TECH. SPEC. = ***** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1126.55	562.75	198.	21.1	8.47E+00
1138.99	568.97	321.	18.3	1.39E+01
1604.08	801.47	118.	13.7	6.74E+00
2730.32	1364.87	31.	49.8	2.75E+00

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1218.83	608.87	36.	33.0	1.63E+00
2921.09	1460.35	166.	15.8	1.58E+01

CANBERRA SPECTRAN-F V2.06 SOFTWARE

222-S COUNTING ROOM

27-AUG-90 09:45:56

ANALYSIS PARAMETERS

MCA UNIT NUMBER: 1 / ADC UNIT NUMBER: 2.0
DETECTOR NUMBER: 2 / GEOMETRY NUMBER: 42
SPECTRUM SIZE: 4096 CHANNELS
ORDER OF SMOOTHING FUNCTION: 5
NUMBER OF BACKGROUND CHANNELS: 4 ON EACH SIDE OF PEAK
PEAK CONFIDENCE FACTOR: 85.0%
IDENTIFICATION ENERGY WINDOW: +- 1.50 KEV
ERROR QUOTATION: 1.96 SIGMA UNCERTAINTY

ENVIRONMENTAL BACKGROUND SUBTRACTED
LLD CALCULATION PERFORMED
MEASURED ENERGY DIFFERENCES LISTED
MULTIPLET ANALYSIS PERFORMED

ANALYSIS OF SPECTRUM SAVED IN DISK FILE: SD2749
ANALYZED BY: DM

SAMPLE DESCRIPTION: F-297 SEGMENT-J
GEOMETRY DESCRIPTION:
SAMPLE SIZE: 1.0000E-03 LI / CONVERSION FACTOR: 5.0000E-01
STANDARD SIZE: 1.0000E+00 EA
ANALYSTS LIBRARY FILE: ANL000

COLLECT STARTED ON 10-JAN-90 AT 09:21:40

COLLECT LIVE TIME: 3000. SECONDS
REAL TIME: 3005. SECONDS
DEAD TIME: 0.17 %

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT

ENERGY CALIBRATION PERFORMED 17-MAR-89
EFFICIENCY CALIBRATION PERFORMED 21-OCT-88

222-S COUNTING ROOM

27-AUG-90 09:45:56

P E A K A N A L Y S I S

PK	CENTROID CHANNEL	ENERGY KEV	FWHM KEV	BACKGND COUNTS	NET AREA COUNTS	ERROR %	NUCLIDES
1C	1127.84	563.55	1.49	552.	502.	14.2	CS-134, EU-152
2C	1139.68	569.47	1.49	485.	956.	11.6	CS-134, BI-207
3	1210.48	604.86	1.70	502.	5996.	2.8	CS-134
4	1324.35	661.79	1.70	366.	8782.	2.2	CS-137
4B		661.85			36.	13.9	
5C	1592.56	795.87	1.70	266.	4293.	3.7	CS-134
6C	1604.64	801.91	1.70	270.	387.	12.5	CS-134
7	2347.01	1173.06	1.94	221.	3775.	3.4	CO-60
8	2665.46	1332.27	2.16	36.	3437.	3.4	CO-60
8B		1332.24			9.	37.4	
9	2731.09	1365.09	2.99	19.	113.	22.4	CS-134
10	2921.55	1460.32	2.32	22.	128.	21.3	K-40
10B		1460.85			156.	3.8	

ERROR QUOTATION AT 1.96 SIGMA
 PEAK CONFIDENCE LEVEL AT 85.0%

C - MULTIPLET ANALYSIS CONVERGED NORMALLY
 B - ENVIRONMENTAL BACKGROUND PEAK

BACKGROUND SUBTRACTION PERFORMED USING FILE BK0012
 BACKGROUND DESCRIPTION: BKG
 BACKGROUND COLLECT STARTED ON 30-AUG-88 AT 16:46:00
 BACKGROUND LIVE TIME: 60000. SECONDS

222-S COUNTING ROOM

27-AUG-90 09:45:56

SAMPLE: F-297 SEGMENT-J

DATA COLLECTED ON 10-JAN-90 AT 09:21:40

DECAYED TO 0. DAYS, 0.0000 HOURS BEFORE THE START OF COLLECT.

R A D I O N U C L I D E A N A L Y S I S R E P O R T

NUCLIDE	ACTIVITY CONCENTRATION IN uCi/LI			ENERGY COMPARISON		
	MEASURED	ERROR	DECAY CORRECTED	ERROR	(KEV) EXPECT	DIFF
AC-228	LLD<1.12E+00		LLD<1.12E+00		911.07	
AG-108M	LLD<2.84E-01		LLD<2.84E-01		433.94	
AG-110M	LLD<1.35E+00		LLD<1.35E+00		657.76	
AM-241	LLD<1.32E+00		LLD<1.32E+00		59.54	
AM-243	LLD<3.41E-01		LLD<3.41E-01		74.67	
AR-41	LLD<2.19E-01		LLD<2.19E-01		1293.64	
AU-198	LLD<2.56E-01		LLD<2.56E-01		411.80	
BA-133	LLD<3.36E-01		LLD<3.36E-01		356.02	
BA-139	LLD<7.17E-01		LLD<7.17E-01		165.85	
BA-140	LLD<1.03E+00		LLD<1.03E+00		537.27	
BA-141	LLD<6.88E-01		LLD<6.88E-01		190.23	
BE-7	LLD<2.47E+00		LLD<2.47E+00		477.59	
BI-207	LLD<2.57E-01		LLD<2.57E-01		569.70	
BI-212	LLD<3.76E+00		LLD<3.76E+00		727.27	
BI-214	LLD<2.05E+00		LLD<2.05E+00		609.32	
CD-109	LLD<4.30E+00		LLD<4.30E+00		88.03	
CE-139	LLD<1.62E-01		LLD<1.62E-01		165.85	
CE-141	LLD<2.59E-01		LLD<2.59E-01		145.44	
CEPR144	LLD<2.06E+00		LLD<2.06E+00		133.51	
CO-56	LLD<2.46E-01		LLD<2.46E-01		846.76	
CO-57	LLD<1.33E-01		LLD<1.33E-01		122.06	
CO-58	LLD<2.38E-01		LLD<2.38E-01		810.75	
CO-60	2.25E+01	+ -8.14E-01	2.25E+01	+ -8.14E-01	1332.50	-0.23
					1173.24	-0.18
CR-51	LLD<1.94E+00		LLD<1.94E+00		320.09	
CS-134	2.16E+01	+ -8.27E-01	2.16E+01	+ -8.27E-01	795.84	0.03
					604.70	0.16
CS-136	LLD<2.71E-01		LLD<2.71E-01		818.51	
CS-137	3.78E+01	+ -9.55E-01	3.78E+01	+ -9.55E-01	661.65	0.14
CS-138	LLD<2.37E-01		LLD<2.37E-01		1435.86	
EU-152	LLD<4.57E-01		LLD<4.57E-01		1408.01	
EU-154	LLD<4.77E-01		LLD<4.77E-01		1274.45	
EU-155	LLD<6.04E-01		LLD<6.04E-01		105.31	
FE-59	LLD<5.62E-01		LLD<5.62E-01		1099.25	
HF-181	LLD<2.98E-01		LLD<2.98E-01		482.20	
HG-203	LLD<2.09E-01		LLD<2.09E-01		279.20	
I-131	LLD<2.65E-01		LLD<2.65E-01		364.48	
I-132	LLD<7.54E-01		LLD<7.54E-01		667.69	
I-133	LLD<2.71E-01		LLD<2.71E-01		529.69	
I-134	LLD<3.69E-01		LLD<3.69E-01		847.03	
I-135	LLD<5.49E-01		LLD<5.49E-01		1260.41	
K-40	LLD<2.21E+00		LLD<2.21E+00		1460.75	
KR-85	LLD<5.81E+01		LLD<5.81E+01		513.99	
KR-85M	LLD<1.64E-01		LLD<1.64E-01		151.17	
KR-87	LLD<5.89E-01		LLD<5.89E-01		402.58	
KR-89	LLD<8.53E+00		LLD<8.53E+00		220.90	
LA-140	LLD<1.40E-01		LLD<1.40E-01		1596.20	

LA-142	LLD<5.70E-01	LLD<5.70E-01	641.83
MN-54	LLD<2.34E-01	LLD<2.34E-01	834.83
MN-56	LLD<2.78E-01	LLD<2.78E-01	846.76
NA-22	LLD<1.69E-01	LLD<1.69E-01	1274.55
NA-24	LLD<2.34E-01	LLD<2.34E-01	1368.60
NB-94	LLD<2.25E-01	LLD<2.25E-01	702.63
NB-95	LLD<2.39E-01	LLD<2.39E-01	765.78
NB-97	LLD<1.53E+00	LLD<1.53E+00	657.92
NP-238	LLD<1.05E+00	LLD<1.05E+00	984.45
NP-239	LLD<1.26E+00	LLD<1.26E+00	277.60
PA-233	LLD<5.16E-01	LLD<5.16E-01	311.98
PA-234M	LLD<5.09E+01	LLD<5.09E+01	1001.03
PB-210	LLD<6.30E+00	LLD<6.30E+00	465.03
PB-212	LLD<3.92E-01	LLD<3.92E-01	239.00
PB-214	LLD<5.51E-01	LLD<5.51E-01	351.92
PO-210	LLD<2.06E+04	LLD<2.06E+04	804.00
PO-214	LLD<9.92E+03	LLD<9.92E+03	799.70
PO-216	LLD<1.55E+04	LLD<1.55E+04	804.90
PU-239	LLD<1.98E+03	LLD<1.98E+03	129.30
PU-241	LLD<6.31E+04	LLD<6.31E+04	148.57
RA-224	LLD<4.15E+00	LLD<4.15E+00	240.99
RA-226	LLD<3.73E+00	LLD<3.73E+00	186.10
RB-88	LLD<1.02E+00	LLD<1.02E+00	1836.00
RB-89	LLD<1.28E+00	LLD<1.28E+00	1031.88
RN-220	LLD<2.12E+02	LLD<2.12E+02	549.73
RU-103	LLD<2.59E-01	LLD<2.59E-01	497.08
RURH106	LLD<4.54E+00	LLD<4.54E+00	621.80
SB-124	LLD<5.40E-01	LLD<5.40E-01	602.72
SB-125	LLD<2.03E+00	LLD<2.03E+00	176.33
SC-46	LLD<2.87E-01	LLD<2.87E-01	1120.45
SE-75	LLD<3.02E-01	LLD<3.02E-01	264.66
SN-113	LLD<3.62E-01	LLD<3.62E-01	391.67
SR-85	LLD<2.55E-01	LLD<2.55E-01	513.99
SR-91	LLD<4.78E-01	LLD<4.78E-01	555.60
SR-92	LLD<1.72E-01	LLD<1.72E-01	1383.94
TA-182	LLD<8.32E-01	LLD<8.32E-01	1121.30
TC-99M	LLD<1.37E-01	LLD<1.37E-01	140.51
TE-123M	LLD<1.53E-01	LLD<1.53E-01	159.00
TE-125M	LLD<4.21E+01	LLD<4.21E+01	109.27
TE-132	LLD<1.84E-01	LLD<1.84E-01	228.16
TH-228	LLD<1.44E+01	LLD<1.44E+01	84.37
TL-208	LLD<3.02E-01	LLD<3.02E-01	583.14
U-235	LLD<2.48E-01	LLD<2.48E-01	185.71
U-237	LLD<7.17E-01	LLD<7.17E-01	208.00
W-187	LLD<8.09E-01	LLD<8.09E-01	685.74
XE-131M	LLD<6.84E+00	LLD<6.84E+00	163.98
XE-133	LLD<4.89E-01	LLD<4.89E-01	81.00
XE-133M	LLD<1.64E+00	LLD<1.64E+00	233.21
XE-135	LLD<1.85E-01	LLD<1.85E-01	249.79
XE-138	LLD<1.42E+00	LLD<1.42E+00	258.41
Y-88	LLD<9.63E-02	LLD<9.63E-02	1836.06
Y-91	LLD<6.86E+01	LLD<6.86E+01	1204.90
Y-91M	LLD<3.62E-01	LLD<3.62E-01	555.60
ZN-65	LLD<6.91E-01	LLD<6.91E-01	1115.55
ZR-95	LLD<4.14E-01	LLD<4.14E-01	756.73
ZR-97	LLD<2.41E-01	LLD<2.41E-01	743.33

TOTAL 8.19E+01 +-1.50E+00 8.19E+01 +-1.50E+00

STANDARD DEVIATION = 0.18

EBAR = ***** MEV/DISINTEGRATION
MAXIMUM PERMISSABLE ACTIVITY = 1.44E-09 UC/LI
TOTAL MEASURED ACTIVITY = 8.19E+01 (+-1.50E+00) UC/LI
% TECH. SPEC. = ***** (+-****)

ERROR QUOTATION AT 1.96 SIGMA
LLD CONFIDENCE LEVEL AT 85.0%

PEAKS NOT USED IN ANALYSIS

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
1127.84	563.55	502.	14.2	2.96E+01
1139.68	569.47	956.	11.6	5.69E+01
1604.64	801.91	387.	12.5	3.10E+01
2731.09	1365.09	113.	22.4	1.40E+01

PEAKS ELIMINATED BY BACKGROUND SUBTRACTION

CENTROID CHANNEL	ENERGY KEV	NET AREA COUNTS	ERROR %	GAMMAS/SEC
2921.55	1460.32	128.	21.3	1.68E+01

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	WA77344
PROCEDURE/Rev	LA-925-106/A-1
TECHNOLOGIST	M. Franz
DATE	January 05, 1990
TEMPERATURE	N/A
STARTING TIME	0800
ENDING TIME	1500
CHEMIST	S. A. Catlow

Uranium Analysis
Fusion Dissolution

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std.	F0105
2	Reagent Blank	F0120
3	Sample 89-045	F0106
4	Duplicate of Sample 89-045	F0107
5	Spike of Sample 89-045	F0108
6	Sample 89-047	F0130
7	Duplicate of Sample 89-047	F0131
8	Sample 89-048	F0154
9	Duplicate of Sample 89-048	F0155
10	Sample 89-050	F0294
11	Duplicate of Sample 89-050	F0295

	DESCRIPTION	LAB ID
12	Final LMCS Check Std	F0297
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQUT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	58B38/1ul			5.7 mL
Spike	58B38/1ul	F0106/10ul		5.8 mL

WATER DIGESTION TEST ANALYSIS

Single Shell Tank Project

Water Digestion
Laboratory Results of Solids
Units are Sample Wet Weight

Tank 241-U-110

Core 7

Segment 2

Customer ID: 89-047

Laboratory Segment Serial No.:

F0125

Single Shell Tank Project

Water Digestion
Sample Results on Laboratory Digestion

Tank 241-U-110
 Core 7
 Segment 2
 Customer ID: 89-047

		Laboratory Segment Serial No.:			F0125	Check Standard	
Laboratory ID:	Check Standard	Blank	Sample	Sample Duplicate	Spike of Sample		
Water Digestion	F0714	F0726	F0135	F0136	F0137	F0138	
Laboratory ID:	F0714	F0726	F0135	F0136	F0717	F0138	
Ion Chromatograph							
Fluoride	98.60%	<0.1 ppm	<10.1 ppm	<10.1 ppm	98.60%	94.80%	
Chloride	97.70%	<0.1 ppm	<10.1 ppm	<10.1 ppm	108.20%	101.70%	
Nitrate	99.30%	<1.0 ppm	2.57E+02 ppm	2.23E+02 ppm	107.70%	99.70%	
Phosphate	96.40%	<1.0 ppm	<101.00 ppm	<101.00 ppm	105.14%	99.00%	
Sulfate	98.60%	<1.0 ppm	<101.00 ppm	<101.00 ppm	105.50%	96.90%	
Laboratory ID:	F0134	F0146	F0135	F0136	F0137	F0138	
Total Organic Carbon	96.80%	5.2 ug	1.38E-02 g/L	1.21E-02 g/L	96.70%	100.10%	

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	N/A
PROCEDURE/Rev	LA-504-101/A-1
TECHNOLOGIST	Nora Wright
DATE	January 10, 1990
TEMPERATURE	24 C
STARTING TIME	1400 01-09-90
ENDING TIME	0900 01-10-90
CHEMIST	Not Reported

Water Digestion

Note: sample is not spiked prior to digestion. This procedure provides a sample to be spiked later with the appropriate elements.

	DESCRIPTION	LAB ID
1	Reagent Blank	F0146
2	Sample 89-047	F0135
3	Duplicate of Sample 89-047	F0136
4	Spike of Sample 89-047	F0137
5		
6		
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQ.T.VOL.	FINAL VOL. OF STD.
N/A				
Spike (See Note)				

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	DIONEX 4000
PROCEDURE/REV	LA-533-105/A-3
TECHNOLOGIST	Nora Wright
DATE	02-16-90
TEMPERATURE	24 C
STARTING TIME	1130
ENDING TIME	1342
CHEMIST	H. S. Rich

Ion Chromatograph
Water Digestion
(*) Chromatograph Only

	DESCRIPTION	LAB ID
1	Eluent Blank	*
2	Initial LMCS Check Std	F0714
3	Reagent Blank	F0726
4	Sample 89-082	F0715
6	Duplicate of Sample 89-082	F0716
6	Spike of Sample 89-082	F0717
7	Sample 89-047	F0135
8	Duplicate of Sample 89-047	F0136
9	Final LMCS Check Std	F0138
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQ.T.VOL.	FINAL VOL. OF STD.
LMCS Check Std.	6C11H1/100uL			10.1 mL
Spike	35C9-67/300uL	F0717/3.02mG		5.3 mL

Single Shell Tank Calibration Record

ANALYTE:	Ion Chromatograph		
PROCEDURE:	LA-533-105	REVISION:	A-3
INSTRUMENT:	DIONEX 4000		
TECHNOLOGIST:	Nora Wright		
DATE:	February 14, 1990		
CALIBRATION STANDARD ID: 35C9-67 issued 02-06-90			
ANALYTE CONCENTRATION: F 47.0 Cl 60.0 NO ₃ 481.0 PO ₄ 492.0 SO ₄ 482.0			
TYPE OF CALIBRATION:			
COMMENTS:			

SST-103 Rev. (Draft) 9/4/90 Interim

Detector Parameters

Number of Detectors.....	1
Detector 1 Type.....	CDM-1

Report Options

Run Time (minutes).....	11.50
Detector 1 real time plot scale.....	20.00
Print Report.....	Yes
Print Replot.....	Yes
AutoScale Replot to Highest Peak.....	Yes
Print Retention Times on Chromatogram.....	Yes
List Peaks Not Found in this run.....	No
Report Unknowns found in run.....	No
Record Raw Data.....	Yes
Raw Data File Name: c:\WINDOWS\AI400\DATA\90021401.D08	
Record Result Data.....	No

Integration Parameters

Sampling Rate (seconds).....	0.20
Peak Threshold (mV or uS/data pt interval).....	0.400
Starting Peak Width (seconds).....	10.0
Peak Area Reject.....	1000

Integration Timed Events

Time	Description
------	-------------

Calibration Parameters

External or Internal Calibration.....	External
Calibrate by Area or Height.....	Height
Replace Or Average Calibrations.....	Replace
Number Of Levels for Calibration.....	6
Calibration fit type.....	Quadratic
Response Factor for unknown peaks.....	0.0
Default Injection Volume.....	1.0
Default Dilution Factor.....	1.0
Area Reject for Reference Peaks.....	1000
Percent Retention Time Window for Reference Peaks.....	5.0

Component # 1 FLUORIDE Retention Time 0.97
 Reference Peak FLUORIDE Window Size 2.00%
 Least Squares Slope = 3.60283E-004
 Least Squares Intercept = 1.37365E-002
 Ka = -4.29870E-009

Level	Amount	Area	Height
1	9.38100E-002	1336	246
2	2.33800E-001	3478	616
3	4.65300E-001	7271	1226
4	9.21500E-001	15622	2625
5	1.80760E+000	37180	5315
6	3.48130E+000	74116	11092

Component # 2 CHLORIDE Retention Time 1.53
 Reference Peak FLUORIDE Window Size 2.50%
 Least Squares Slope = 6.25472E-004
 Least Squares Intercept = -1.74138E-002
 Ka = -1.51561E-008

Level	Amount	Area	Height
1	1.19800E-001	1267	200
2	2.98500E-001	2903	489
3	5.94100E-001	6430	1017
4	1.17650E+000	13713	2088
5	2.30760E+000	28370	4066
6	4.44430E+000	59291	9183

Component # 3 NITRITE Retention Time 1.90
 Reference Peak FLUORIDE Window Size 5.00%
 Least Squares Slope = 8.73497E-004
 Least Squares Intercept = 5.05282E-001
 Ka = 4.08720E-009

Level	Amount	Area	Height
1	1.28940E+000	8214	1202
2	3.21850E+000	20050	2969
3	6.39600E+000	43200	6258
4	1.26667E+001	91140	13081
5	2.48451E+001	181100	25092
6	4.78505E+001	353600	44776

Component # 4 NITRATE Retention Time 3.28
 Reference Peak FLUORIDE Window Size 7.00%
 Least Squares Slope = 1.95501E-003
 Least Squares Intercept = -6.94769E-003
 Ka = 4.87686E-009

Level	Amount	Area	Height
1	9.60100E-001	5253	468
2	2.39300E+000	15077	1234
3	4.76240E+000	30767	2460
4	9.43140E+000	63964	4753
5	1.84992E+001	132213	9250
6	3.56286E+001	274103	17468

Component # 5 PHOSPHATE Retention Time 5.10
 Reference Peak FLUORIDE Window Size 7.00%
 Least Squares Slope = 5.16373E-003
 Least Squares Intercept = 1.15944E-001
 Ka = -7.81115E-008

Level	Amount	Area	Height
1	9.82000E-001	2854	180
2	2.44770E+000	7216	437
3	4.87130E+000	16848	948
4	9.64710E+000	32539	1886
5	1.89223E+001	69406	3876
6	3.64434E+001	142872	8003

Component # 6 SULFATE Retention Time 6.43
 Reference Peak FLUORIDE Window Size 5.00%
 Least Squares Slope = 2.38873E-003
 Least Squares Intercept = 2.12534E-001
 Ka = -1.74248E-008

Level	Amount	Area	Height
1	9.62100E-001	6077	338
2	2.39800E+000	17483	922
3	4.77230E+000	36861	1890
4	9.45100E+000	79004	4005
5	1.85377E+001	163581	8158
6	3.57027E+001	343157	16953

IC Control File: C:\WINDOWS\AI400\METHOD\GROUT01.TE

Step	Time	Description
Init		CDM AutoOffset Off
Init		CDM Recorder Mark OFF
Init		CDM Temp. Comp. = 1.7 / Deg C
Init		CDM Recorder Range = 1.000 uS
Init		CDM Cell ON
Init		CMA Heater = 25 Deg. C
Init		Valve A ON
Init		Valve B ON
Init		Inject Valve OFF
Init		CIM Relay 1 OFF
Init		CIM Relay 2 OFF
Init		CIM AC 1 OFF
Init		CIM AC 2 OFF
Init		GPM Start
Init		GPM Hold Gradient Clock
Init		GPM Reset ON
1	0.0	CDM AutoOffset ON
1	0.0	GPM Reset OFF
2	0.1	Inject Valve ON
2	0.1	GPM Run Gradient Clock
3	3.0	Inject Valve OFF
4	3.5	CIM Relay 1 ON
5	4.0	CIM Relay 1 OFF

GpmFile: C:\WINDOWS\AI400\METHOD\GROUT01.GPM

Lo Pressure Limit = 200

Hi Pressure Limit = 2000

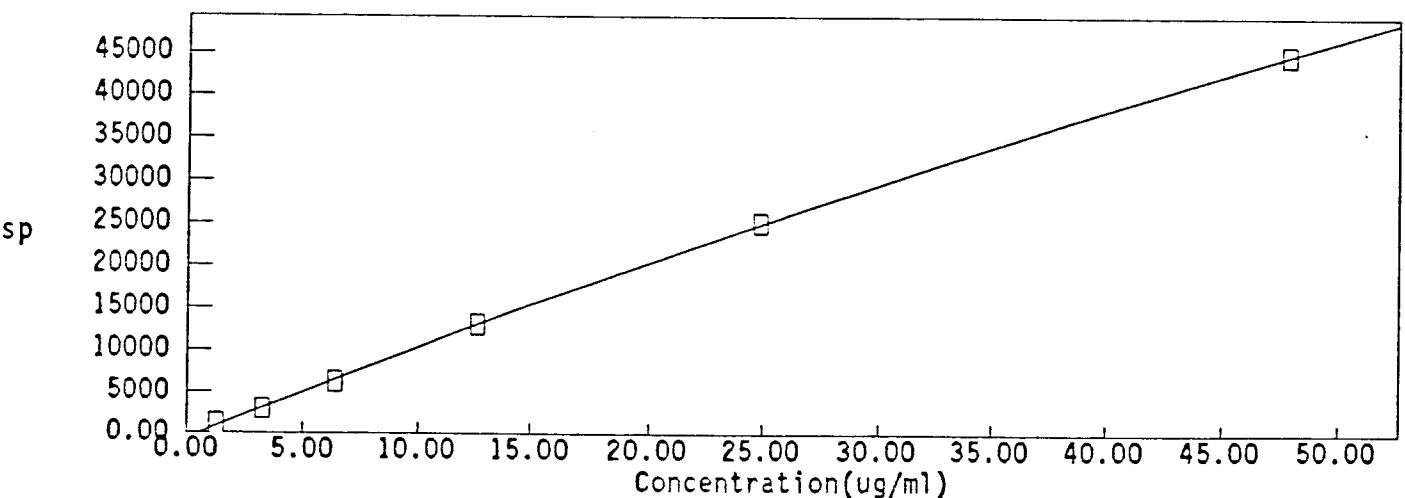
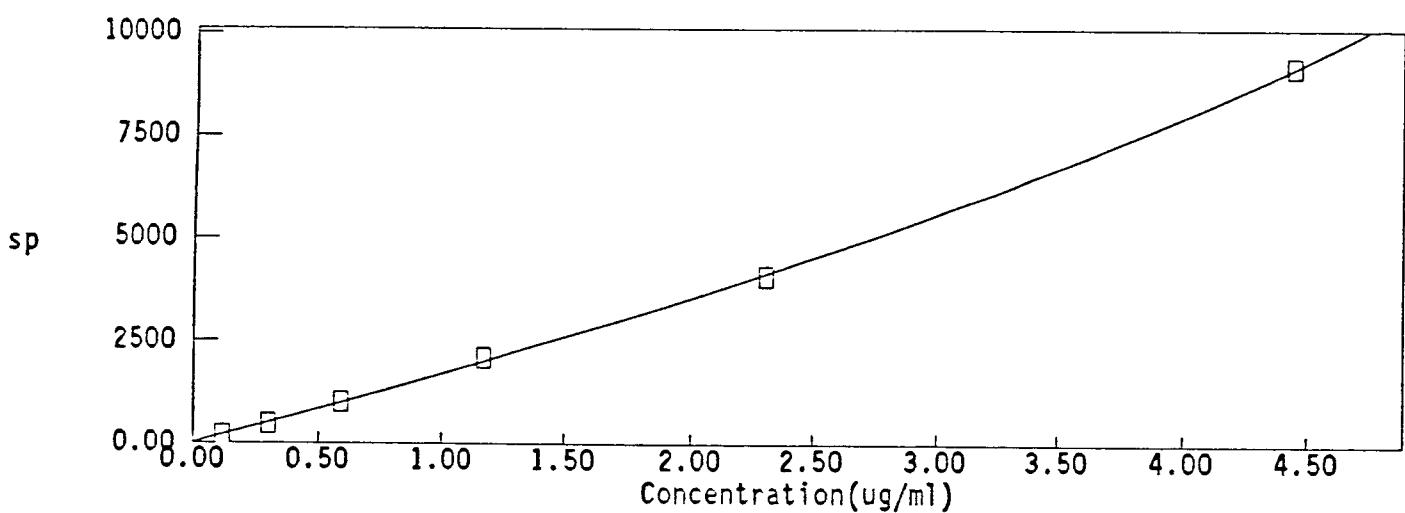
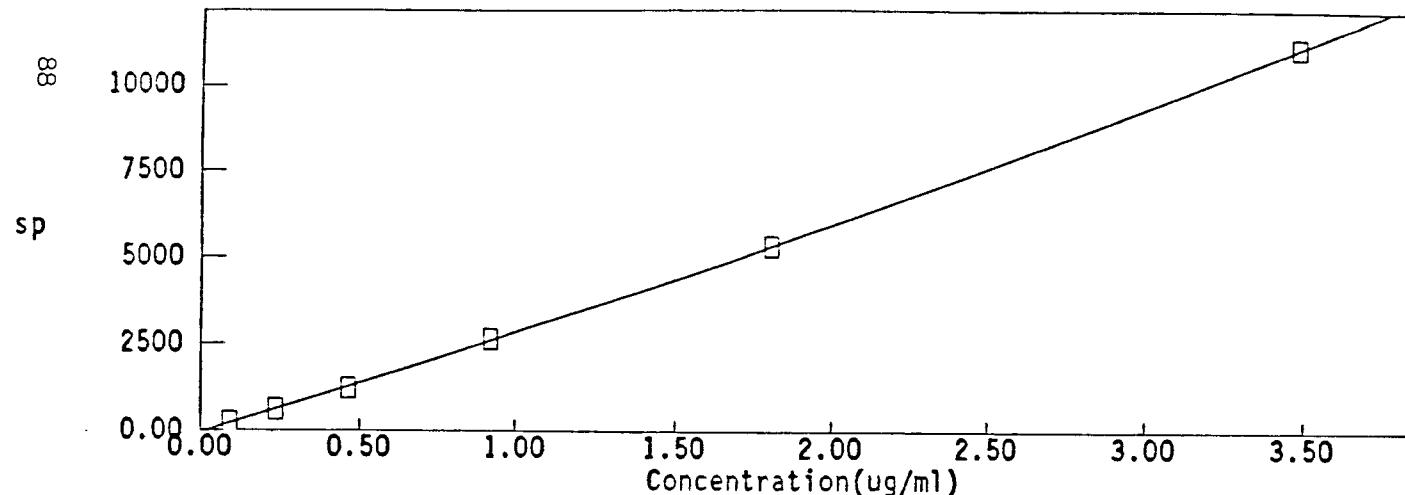
Eluant 1 - DI WATER

Eluant 2 - BICARBONATE

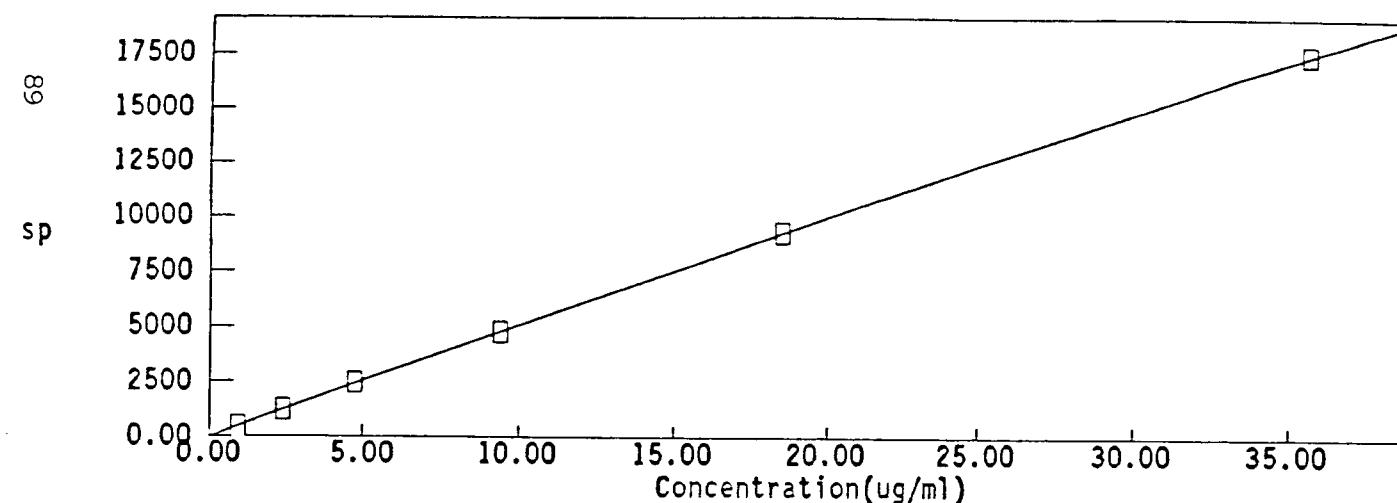
Eluant 3 - CARBONATE

Eluant 4 -

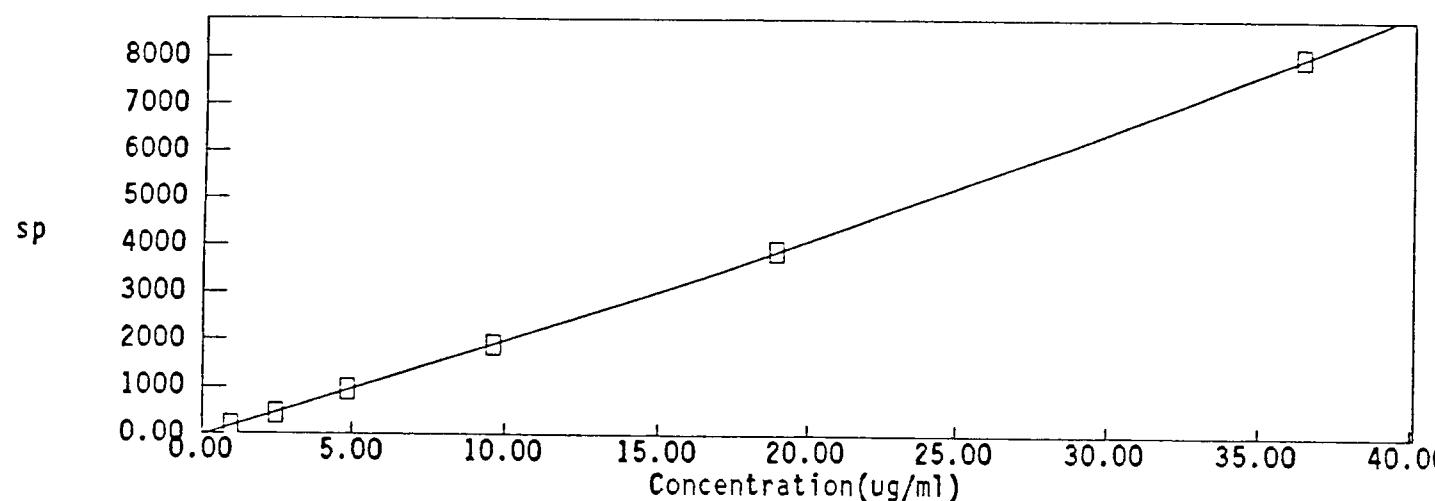
Time	Flow	%1	%2	%3	%4	Comment
0.0	2.0	84	8	8	0	
15.0	2.0	84	8	8	0	



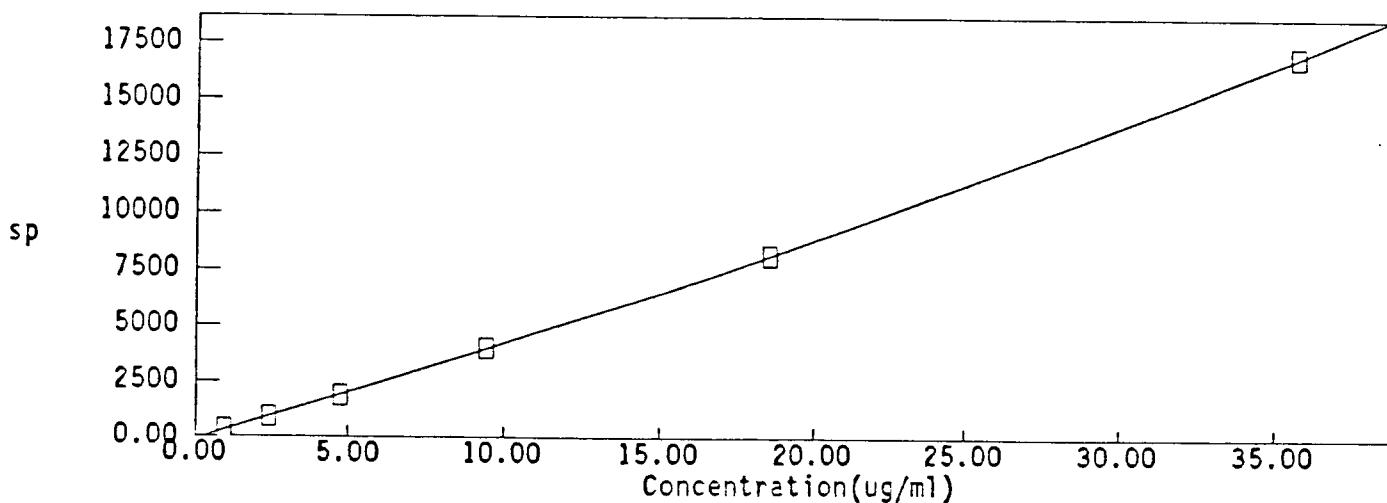
Component: NITRATE
Fit Type: Quadratic
Conc = (4.876863e-009 * Resp*) +
(1.955009e-003 * Resp) + -0.0069
Standardization: Ext
Calibration: Height



Component: PHOSPHATE
Fit Type: Quadratic
Conc = (-7.811152e-008 * Resp*) +
(5.163732e-003 * Resp) + 0.1159
Standardization: Ext
Calibration: Height



Component: SULFATE
Fit Type: Quadratic
Conc = (-1.742481e-008 * Resp*) +
(2.388730e-003 * Resp) + 0.2125
Standardization: Ext
Calibration: Height



DATA REPROCESSED ON Wed Jun 06 11:31:37 1990

Sample Name: AUTOCAL1R
Data File : A:\90021401.D03
Method : c:\windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject#: 3 Detector: CDM

Date: Wed Feb 14 14:51:13 1990

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes

Number of Data Points = 3450

Area reject = 1000

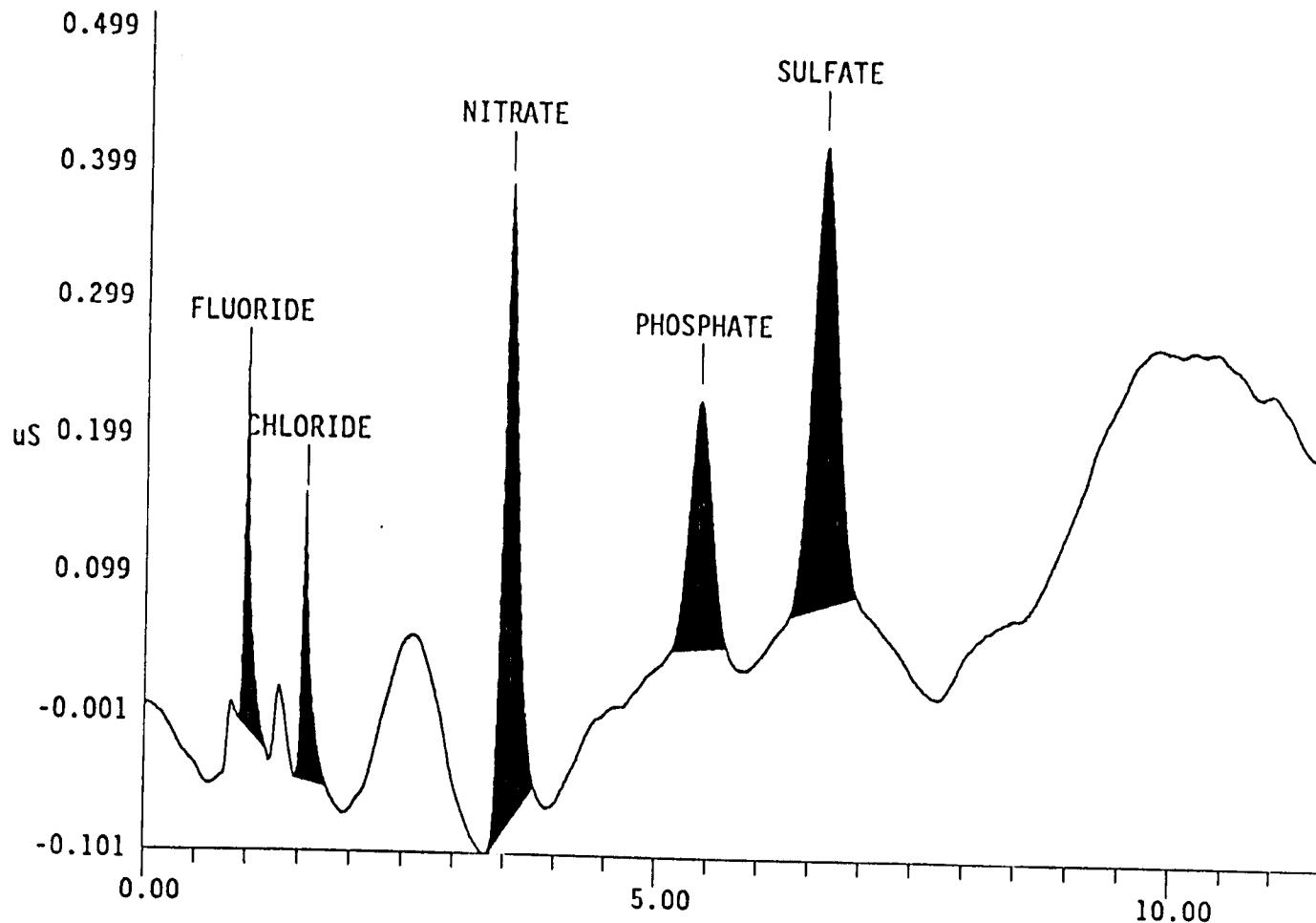
Amount Injected = 1

One Data Point per 0.2 seconds

Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF HEIGHT	BL PEAK	% DELTA RET TIME
1	0.98	FLUORIDE	9.381e-002	1.336e+003	246	1	0 0.00%
2	1.55	CHLORIDE	1.198e-001	1.267e+003	200	1	0 0.00%
3	3.52	NITRATE	9.601e-001	5.253e+003	468	1	0 0.00%
4	5.40	PHOSPHATE	9.820e-001	2.854e+003	180	1	0 0.00%
5	6.60	SULFATE	9.621e-001	6.077e+003	338	1	0 0.00%

File: A:\90021401.D03 Sample: AUTOCAL1R



DATA REPROCESSED ON Wed Jun 06 11:34:04 1990

Sample Name: AUTOCAL2R
Data File : A:\90021401.D04
Method : c:\windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject#: 4

Date: Wed Feb 14 15:03:32 1990

Detector: CDM

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes

Number of Data Points = 3451

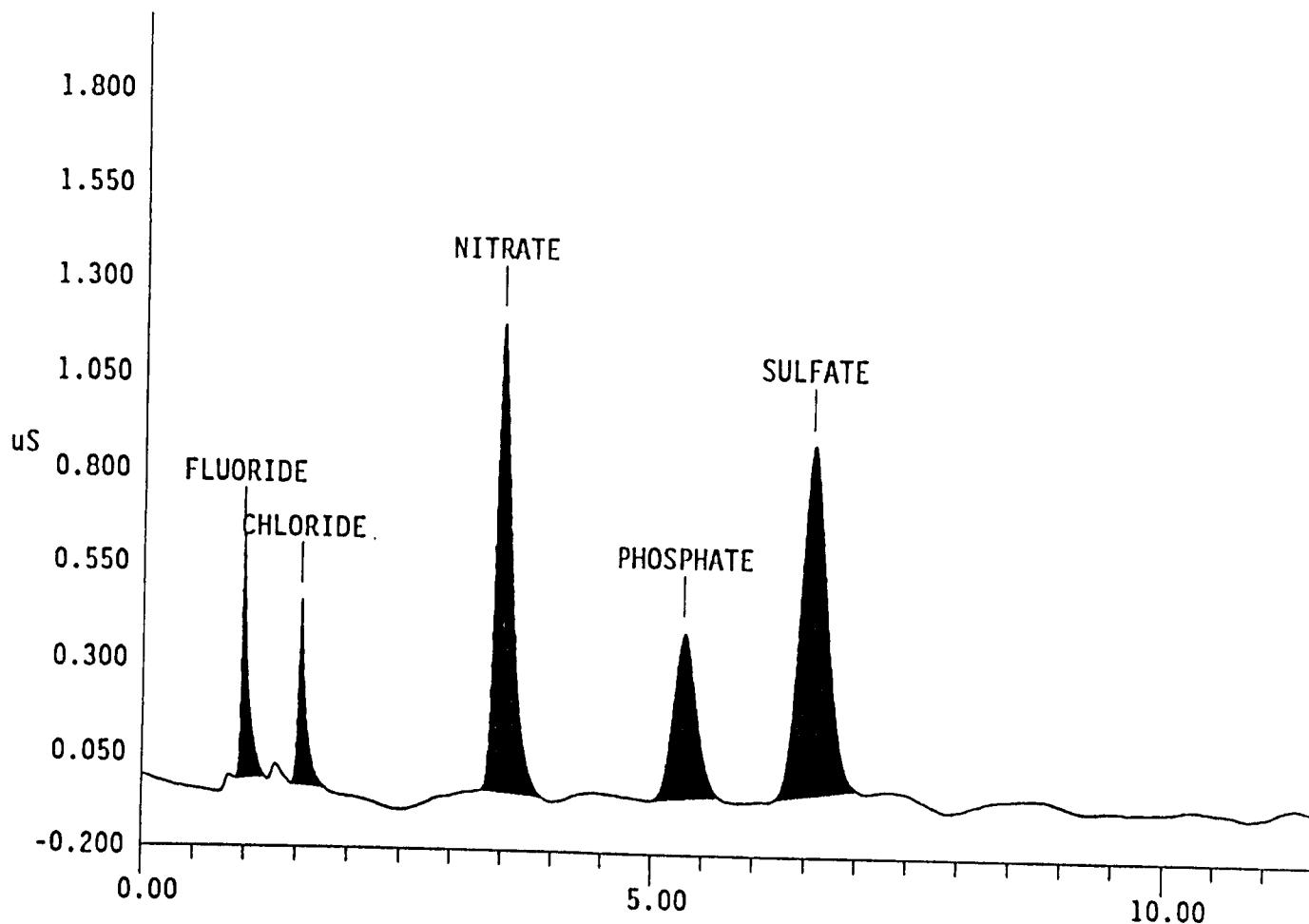
Area reject = 1000

Amount Injected = 1 One Data Point per 0.2 seconds

Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF HEIGHT	BL PEAK	% DELTA RET TIME
1	0.97	FLUORIDE	2.338e-001	3.478e+003	616	1	0 0.00%
2	1.53	CHLORIDE	2.985e-001	2.903e+003	489	1	0 0.00%
3	3.48	NITRATE	2.393e+000	1.508e+004	1234	1	0 0.00%
4	5.30	PHOSPHATE	2.448e+000	7.216e+003	437	1	0 0.00%
5	6.55	SULFATE	2.398e+000	1.748e+004	922	1	0 0.00%

File: A:\90021401.D04 Sample: AUTOCAL2R



DATA REPROCESSED ON Wed Jun 06 11:36:14 1990

Sample Name: AUTOCAL3R

Date: Wed Feb 14 15:15:50 1990

Data File : A:\90021401.D05

Method : c:\windows\ai400\method\SST.met

ACI Address: 1 System : 1 Inject #: 5 Detector: CDM

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes

Number of Data Points = 3451

Area reject = 1000

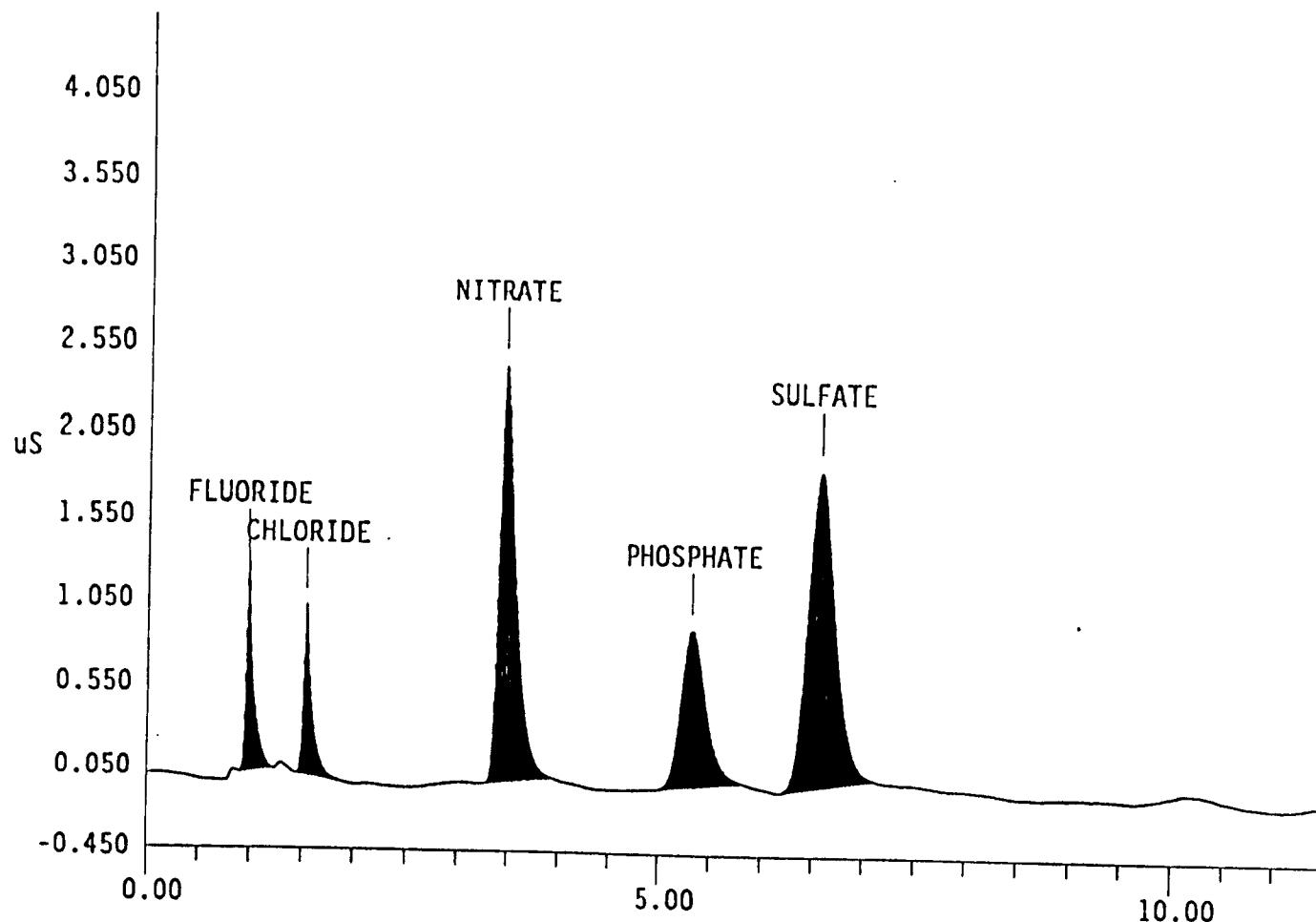
One Data Point per 0.2 seconds

Amount Injected = 1

Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF	% DELTA	BL PEAK	RET TIME
1	0.97	FLUORIDE	4.653e-001	7.271e+003	1226	1	0	0.00%
2	1.53	CHLORIDE	5.941e-001	6.430e+003	1017	1	0	0.00%
3	3.45	NITRATE	4.762e+000	3.077e+004	2460	1	0	0.00%
4	5.32	PHOSPHATE	4.871e+000	1.685e+004	948	1	0	0.00%
5	6.57	SULFATE	4.772e+000	3.686e+004	1890	1	0	0.00%

File: A:\90021401.D05 Sample: AUTOCAL3R



DATA REPROCESSED ON Wed Jun 06 11:39:05 1990

=====
Sample Name: AUTOCAL4R
Data File : A:\90021401.D06
Method : C:\Windows\ai400\method\SST.met
ACI Address: 1 System : 1 Inject #: 6
=====

Date: Wed Feb 14 15:28:08 1990

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes

Area reject = 1000

Amount Injected = 1

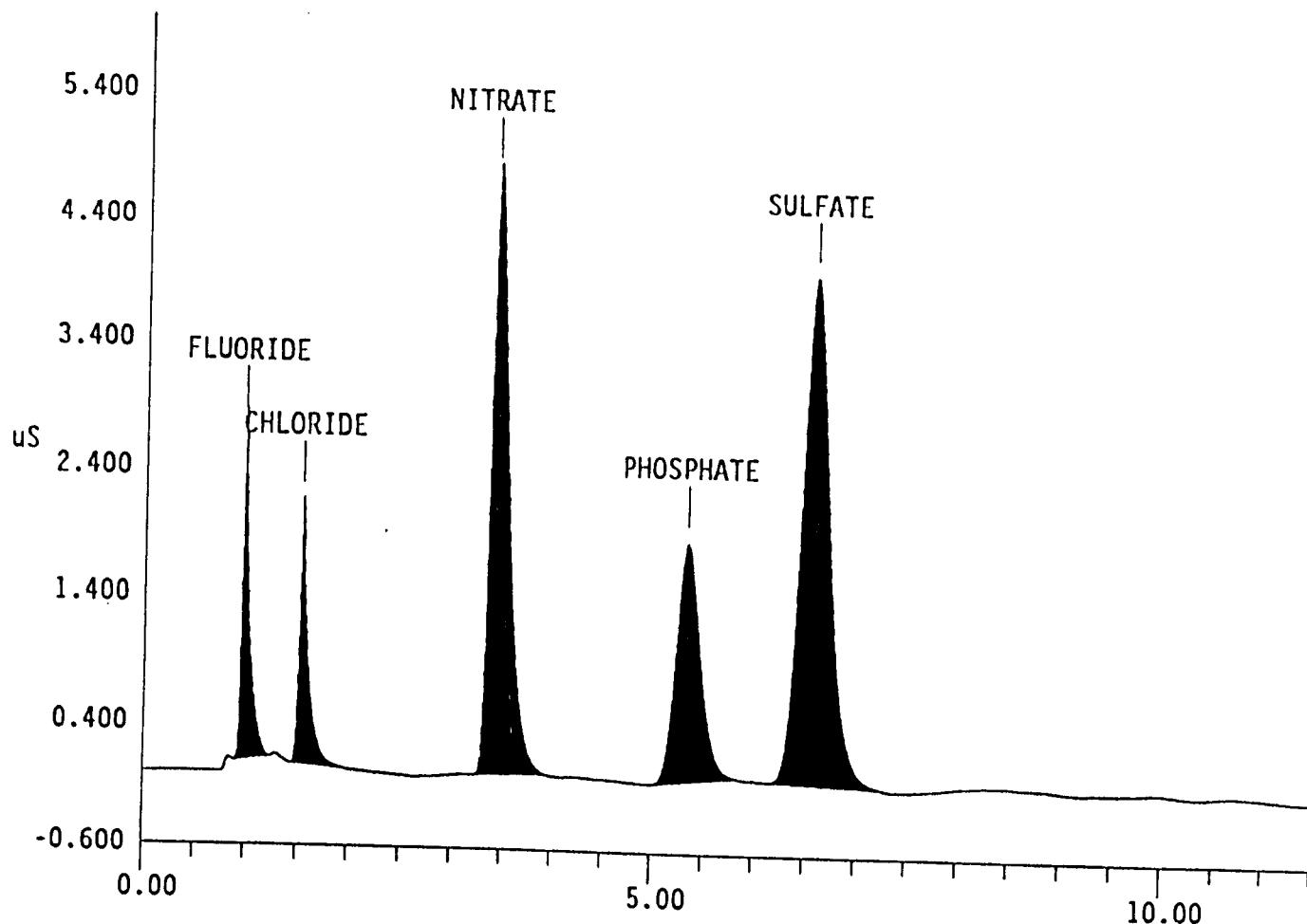
Number of Data Points = 3451

One Data Point per 0.2 seconds

Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	HEIGHT	REF	% DELTA	BL PEAK	RET TIME
1	0.97	FLUORIDE	9.215e-001	1.562e+004	2625	1	0	0.00%	
2	1.53	CHLORIDE	1.177e+000	1.371e+004	2088	1	0	0.00%	
3	3.40	NITRATE	9.431e+000	6.396e+004	4753	1	0	0.00%	
4	5.33	PHOSPHATE	9.647e+000	3.254e+004	1886	1	0	0.00%	
5	6.57	SULFATE	9.451e+000	7.900e+004	4005	1	0	0.00%	

File: A:\90021401.D06 Sample: AUTOCAL4R



DATA REPROCESSED ON Wed Jun 06 11:41:31 1990

=====

Sample Name: AUTOCAL5R	Date: Wed Feb 14 15:40:27 1990
Data File : A:\90021401.D07	
Method : c:\windows\ai400\method\SST.met	
ACI Address: 1 System : 1 Inject#: 7 Detector: CDM	

=====

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes

Number of Data Points = 3451

Area reject = 1000

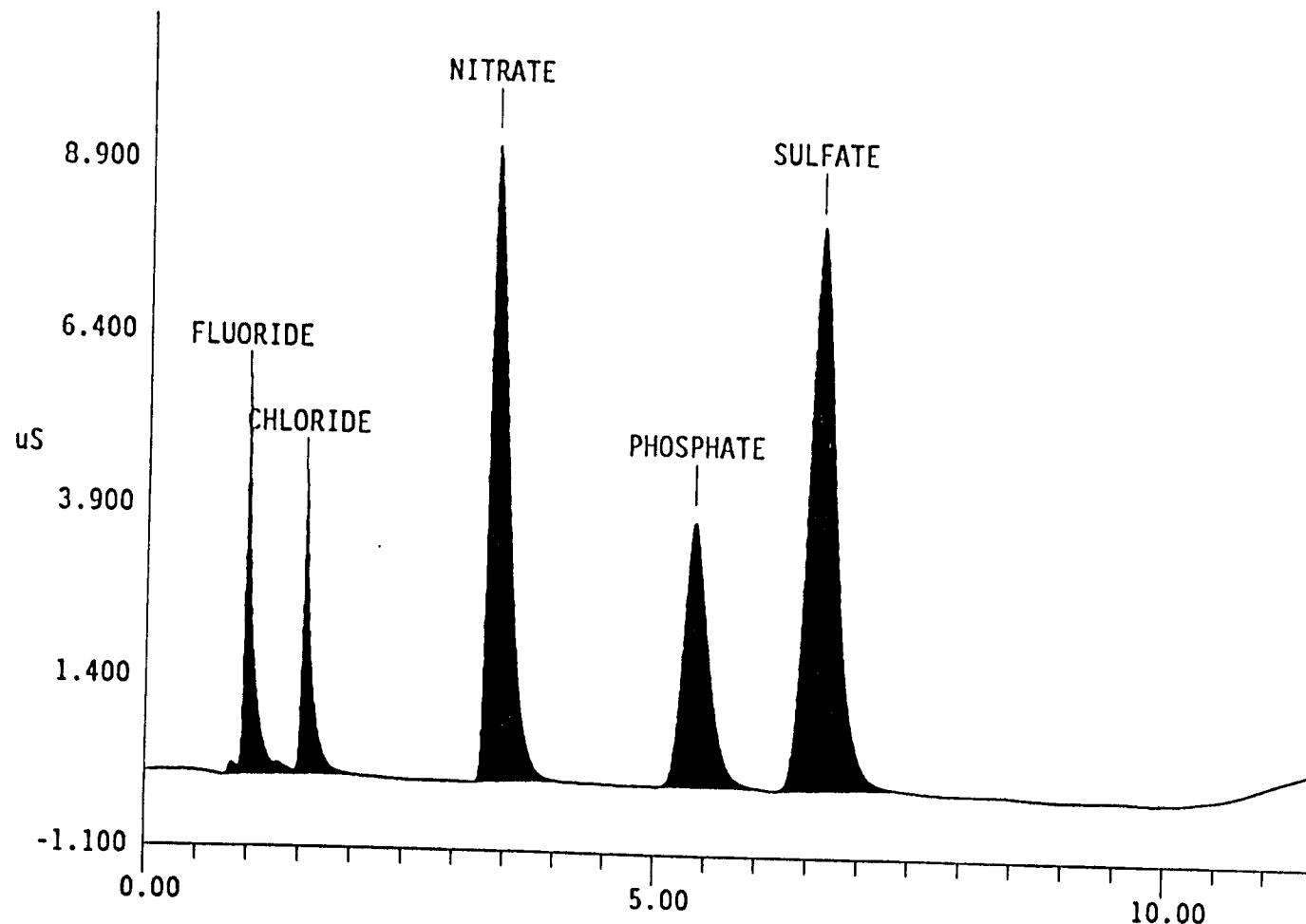
One Data Point per 0.2 seconds

Amount Injected = 1

Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF	% DELTA	BL	PEAK	RET TIME
1	0.97	FLUORIDE	1.808e+000	3.718e+004	5315	2	0	0.00%	
2	1.53	CHLORIDE	2.308e+000	2.837e+004	4066	2	0	0.00%	
3	3.37	NITRATE	1.850e+001	1.322e+005	9250	1	0	0.00%	
4	5.37	PHOSPHATE	1.892e+001	6.941e+004	3876	1	0	0.00%	
5	6.58	SULFATE	1.854e+001	1.636e+005	8158	1	0	0.00%	

File: A:\90021401.D07 Sample: AUTOCAL5R



DATA REPROCESSED ON Wed Jun 06 11:44:00 1990

Sample Name: AUTOCAL6R

Date: Wed Feb 14 15:52:46 1990

Data File : A:\90021401.D08

Method : C:\windows\ai400\method\SST.met

ACI Address: 1 System : 1 Inject #: 8 Detector: CDM

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes

Number of Data Points = 3451

Area reject = 1000

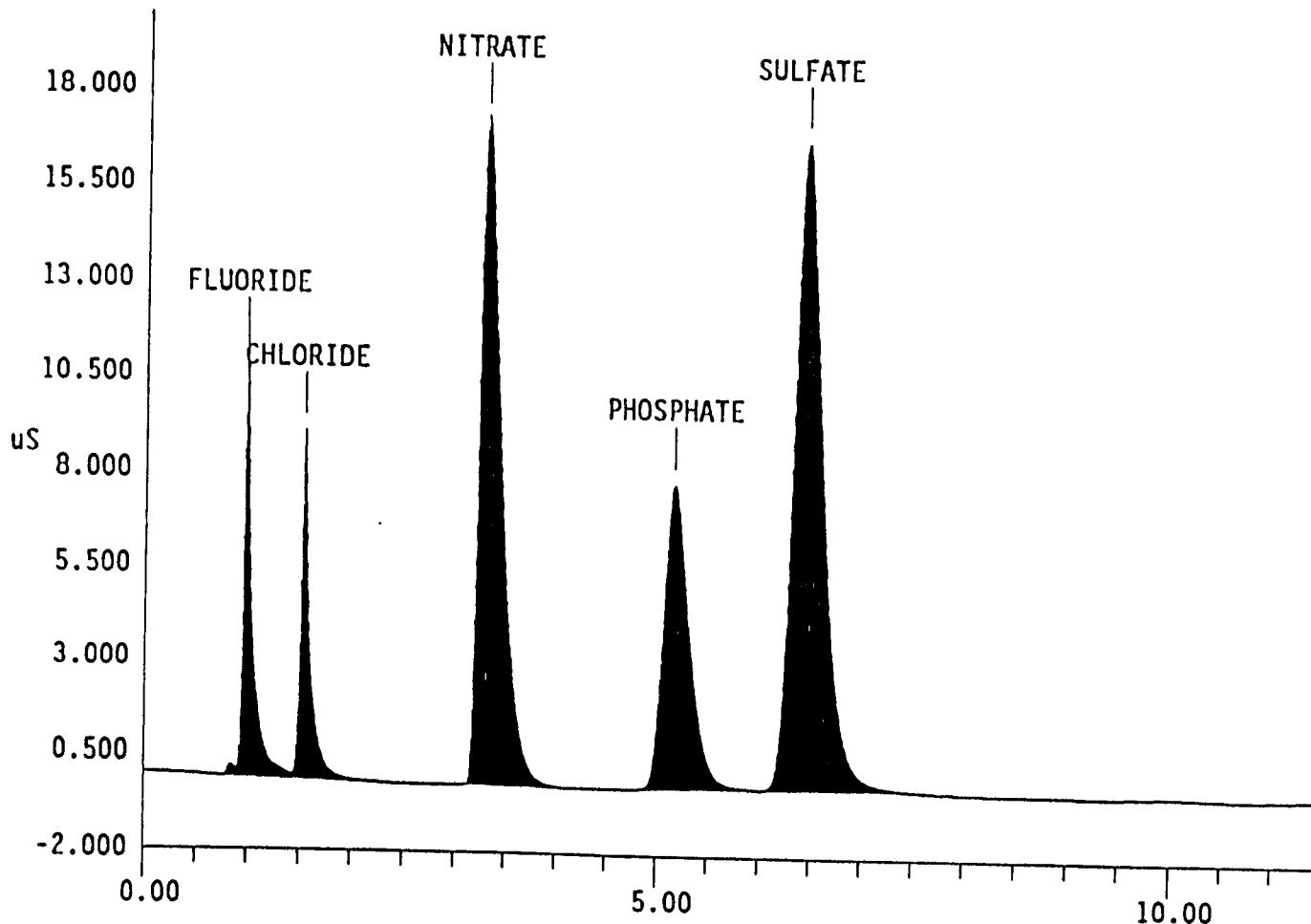
One Data Point per 0.2 seconds

Amount Injected = 1

Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF HEIGHT	BL PEAK	% DELTA RET TIME
1	0.97	FLUORIDE	3.481e+000	7.412e+004	11092	2	0 0.00%
2	1.53	CHLORIDE	4.444e+000	5.927e+004	9183	2	0 0.00%
3	3.28	NITRATE	3.563e+001	2.741e+005	17468	1	0 0.00%
4	5.15	PHOSPHATE	3.644e+001	1.429e+005	8003	1	0 0.00%
5	6.43	SULFATE	3.570e+001	3.432e+005	16953	1	0 0.00%

File: A:\90021401.D08 Sample: AUTOCAL6R



DIONEX SCHEDULE - A:\90021601.SCH

Inj#	Sample Name	Method Name	Data File	Vol.	Dil.	Int.Std.
1	SETUP	...\\sst	...\\900216011	1	0	
2	BLANK	...\\sst	...\\900216011	1	0	
3	LMCS/6C11HI	...\\sst	...\\900216011	101	0	
4	LMCS/73C11J	...\\sst	...\\900216011	101	0	
5	726B	...\\sst	...\\900216011	101	0	
6	715	...\\sst	...\\900216011	1	0	
7	716D	...\\sst	...\\900216011	101	0	
8	717S	...\\sst	...\\900216011	101	0	
9	135	...\\sst	...\\900216011	101	0	
10	136D	...\\sst	...\\900216011	101	0	
11	LMCS/6C11HI	...\\sst	...\\900216011	101	0	
12	LMCS/73C11J	...\\sst	...\\900216011	101	0	

DATA REPROCESSED ON Fri Jun 08 17:27:07 1990

=====
Sample Name: LMCS/6C11HI
Data File : A:\90021601.D03
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 3
=====

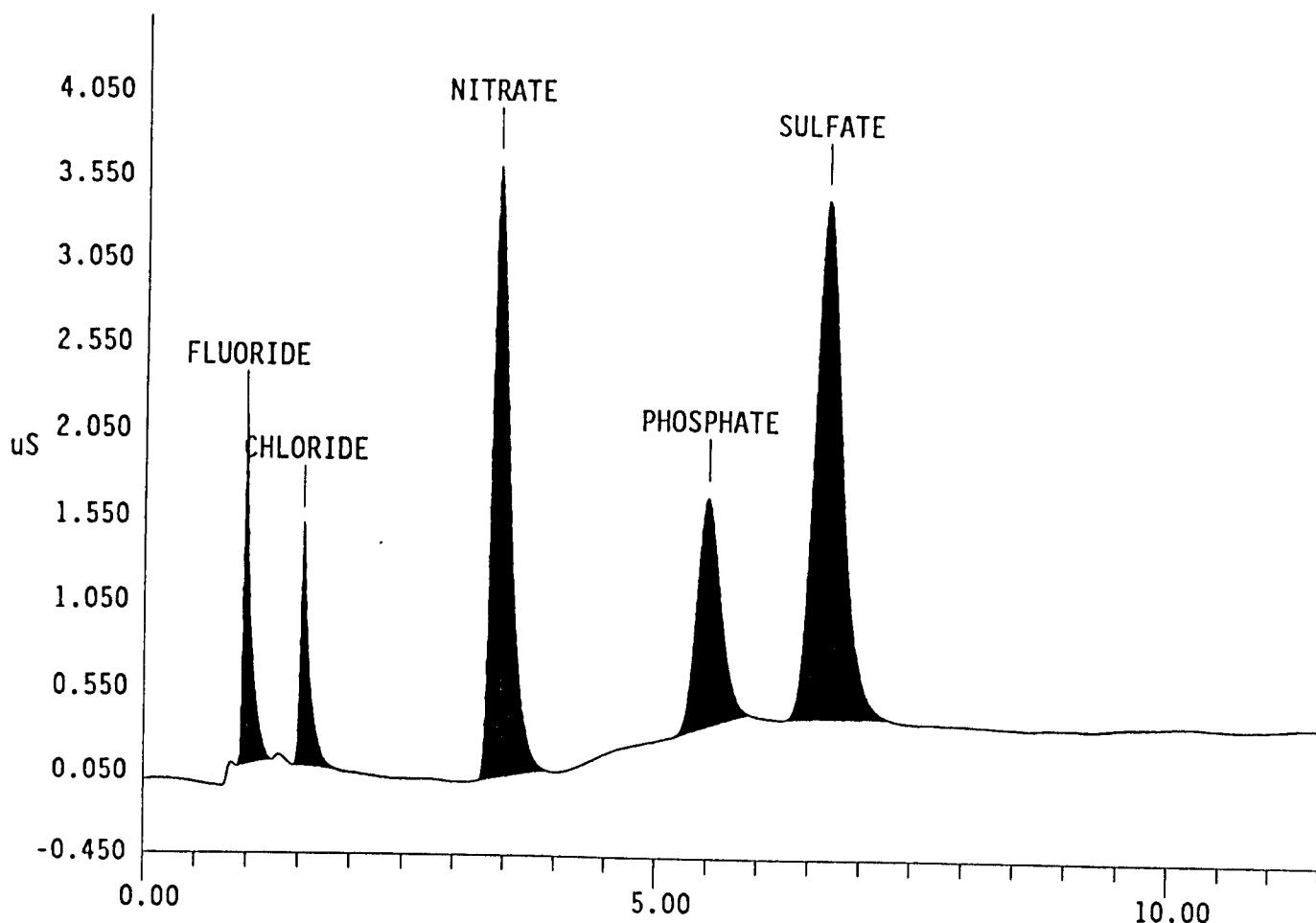
Date: Fri Feb 16 11:51:38 1990
Detector: CDM
=====

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF	% DELTA	BL	PEAK	RET TIME
1	0.97	FLUORIDE	7.099e+001	1.180e+004	1959	1	0	0.00%	
2	1.53	CHLORIDE	8.498e+001	9.179e+003	1422	1	0	0.00%	
3	3.42	NITRATE	7.166e+002	4.701e+004	3601	1	0	-0.00%	
4	5.50	PHOSPHATE	6.958e+002	2.282e+004	1339	1	0	0.00%	
5	6.65	SULFATE	7.387e+002	5.977e+004	3040	1	0	0.00%	

File: A:\90021601.D03 Sample: LMCS/6C11HI



DATA REPROCESSED ON Fri Jun 08 17:05:23 1990

=====

Sample Name: 726B	Date: Fri Feb 16 12:16:11 1990
Data File : A:\90021601.D05	
Method : c:\windows\ai400\method\sst.met	
ACI Address: 1 System : 1 Inject#: 5 Detector: CDM	

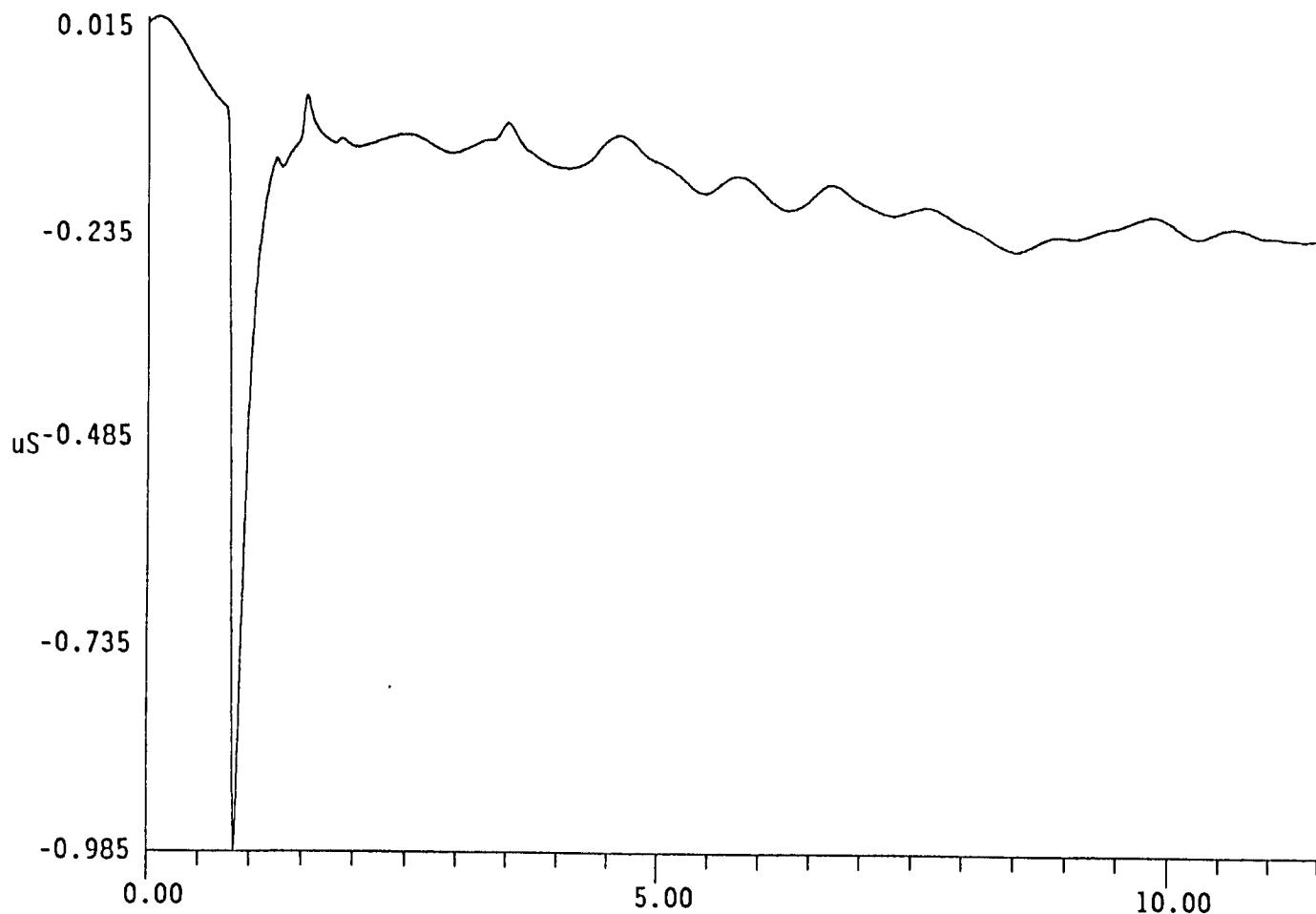
=====

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 1

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF	% DELTA
					HEIGHT	BL PEAK RET TIME

File: A:\90021601.D05 Sample: 726B



DATA REPROCESSED ON Fri Jun 08 17:13:36 1990

=====

Sample Name: 717S	Date: Fri Feb 16 12:52:57 1990
Data File : A:\90021601.D08	
Method : c:\windows\ai400\method\sst.met	
ACI Address: 1	System : 1 Inject#: 8 Detector: CDM

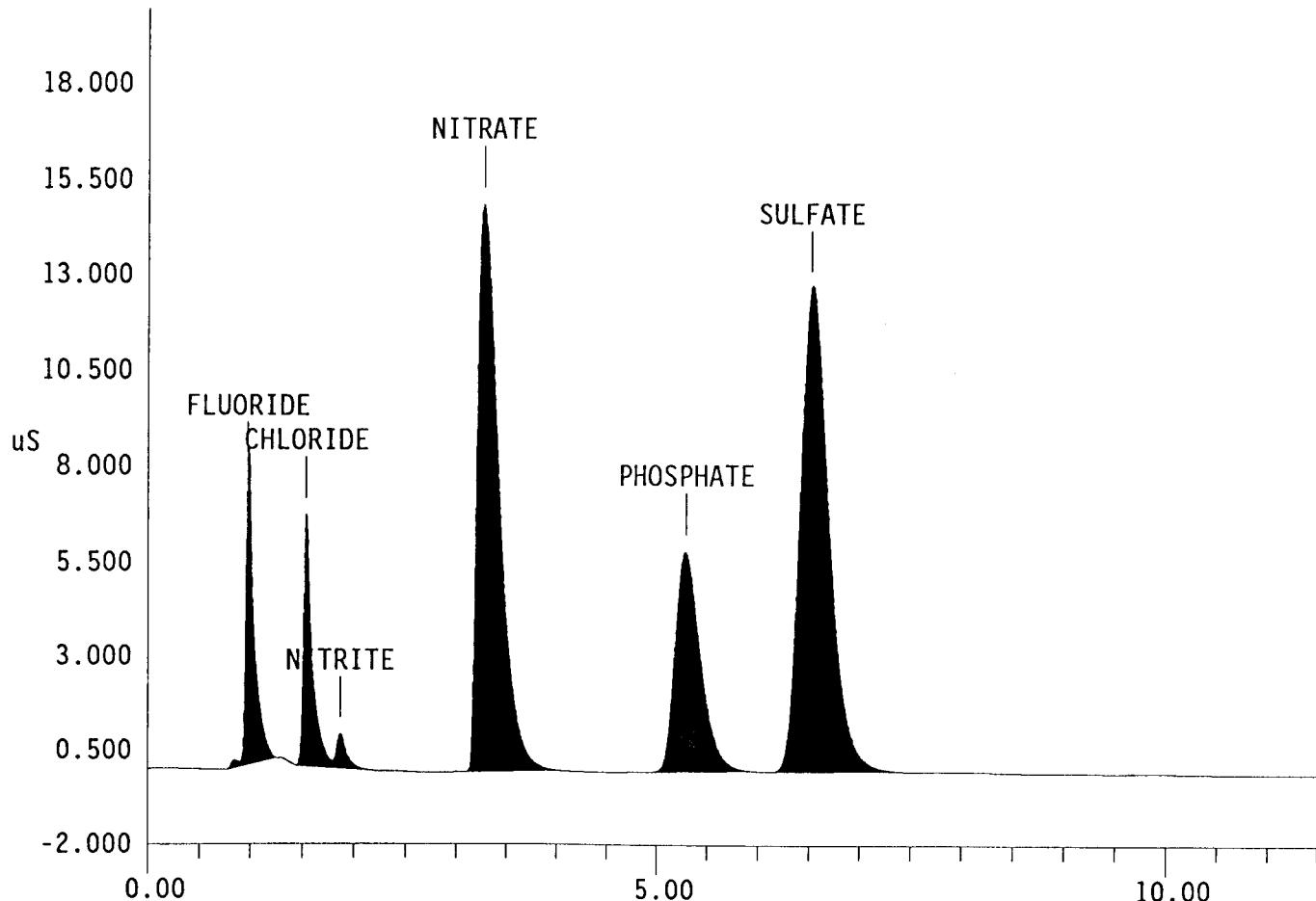
=====

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF	% DELTA	BL PEAK	RET TIME
1	0.97	FLUORIDE	2.498e+002	4.933e+004	7497	1	0	0.00%
2	1.53	CHLORIDE	3.505e+002	4.069e+004	6647	2	0	0.00%
3	1.87	NITRITE	1.337e+002	6.535e+003	933	2	0	0.00%
4	3.27	NITRATE	3.062e+003	2.284e+005	14953	1	0	0.00%
5	5.28	PHOSPHATE	2.790e+003	1.050e+005	5843	1	0	0.00%
6	6.52	SULFATE	2.805e+003	2.548e+005	12716	1	0	0.00%

File: A:\90021601.D08 Sample: 717S



DATA REPROCESSED ON Fri Jun 08 17:18:53 1990

=====

Sample Name: 135	Date: Fri Feb 16 13:05:15 1990
Data File : A:\90021601.D09	
Method : c:\windows\ai400\method\sst.met	
ACI Address: 1	System : 1 Inject#: 9 Detector: CDM

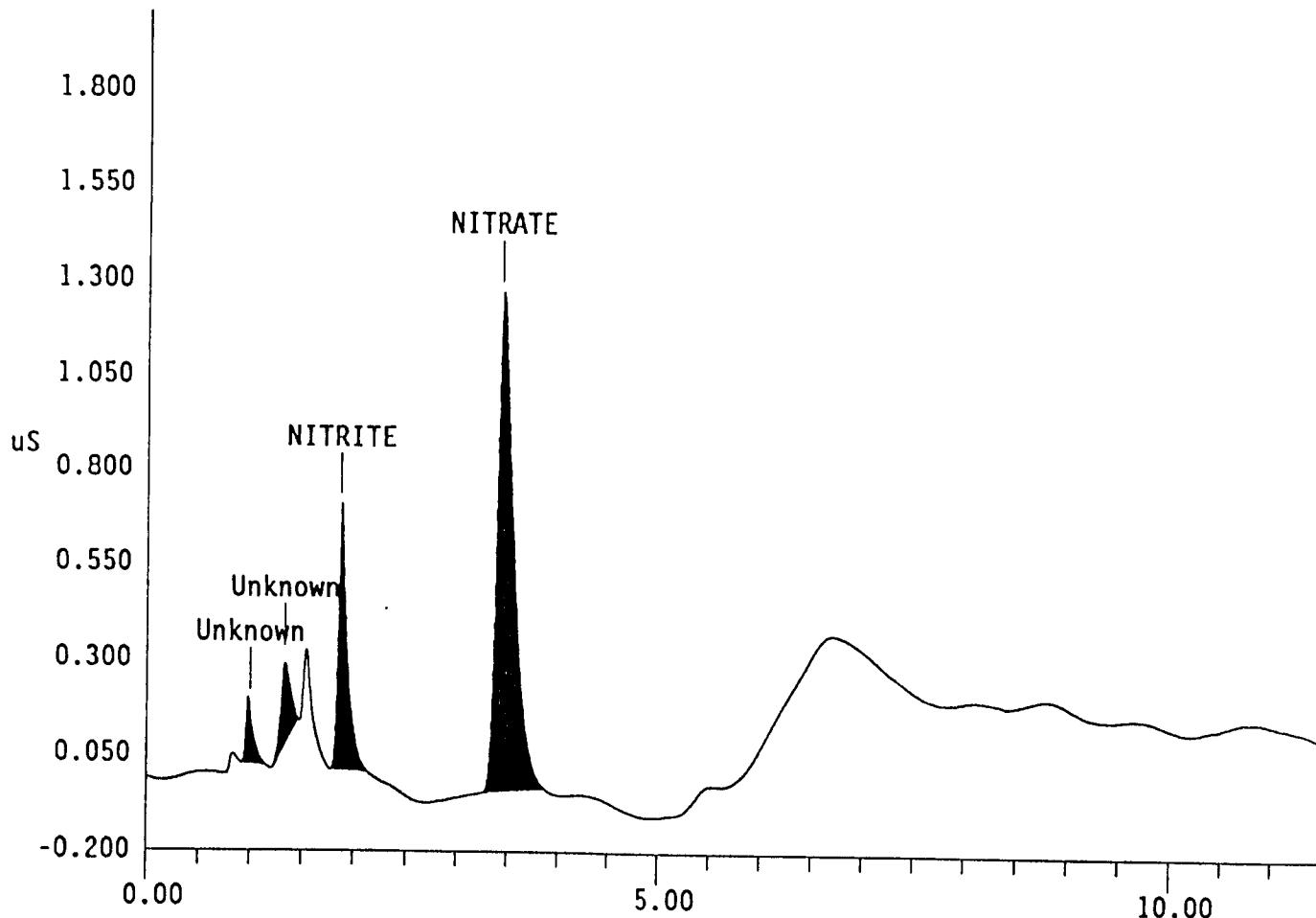
=====

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes Number of Data Points = 3451
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF HEIGHT	BL PEAK	% DELTA RET TIME
2	1.33		0.000e+000	1.522e+003	218	1	
3	1.87	NITRITE	1.115e+002	4.649e+003	683	1	0 0.00%
4	3.43	NITRATE	2.565e+002	1.615e+004	1299	1	0 0.00%

File: A:\90021601.D09 Sample: 135



DATA REPROCESSED ON Fri Jun 08 17:21:11 1990

=====

Sample Name: 136D	Date: Fri Feb 16 13:17:30 1990
Data File : A:\90021601.D10	
Method : c:\windows\ai400\method\sst.met	
ACI Address: 1 System : 1 Inject#: 10	Detector: CDM

=====

***** EXTERNAL STANDARD REPORT *****

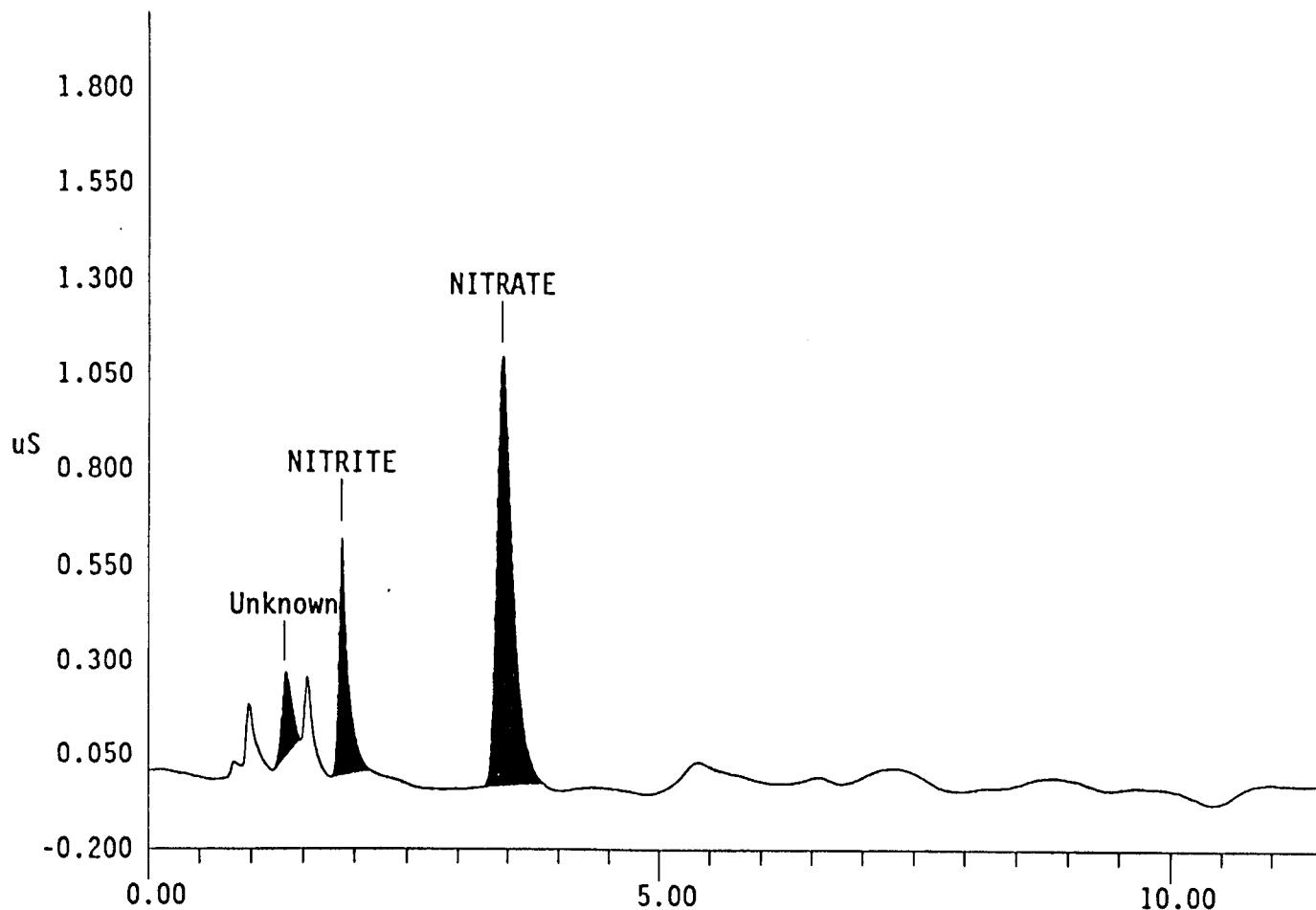
Stop time = 11.50 Minutes Number of Data Points = 3451

Area reject = 1000 One Data Point per 0.2 seconds

Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF	% DELTA	BL	PEAK	RET TIME
1	1.32		0.000e+000	1.618e+003	217	1			
2	1.87	NITRITE	1.068e+002	4.330e+003	630	1	0	0	0.00%
3	3.43	NITRATE	2.225e+002	1.375e+004	1127	1	0	0	0.00%

File: A:\90021601.D10 Sample: 136D



DATA REPROCESSED ON Fri Jun 08 17:23:32 1990

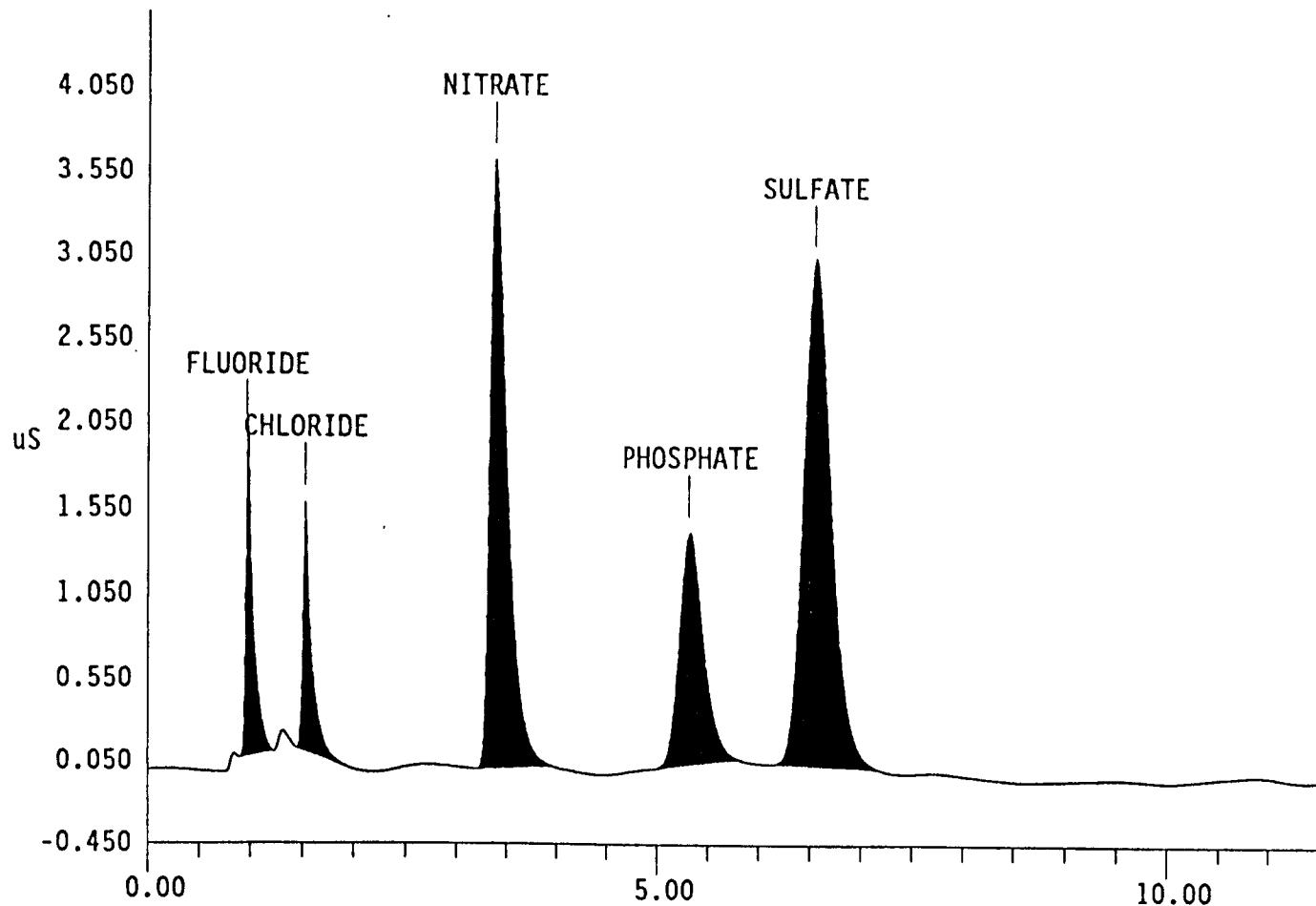
=====
Sample Name: LMCS/6C11HI Date: Fri Feb 16 13:29:44 1990
Data File : A:\90021601.D11
Method : c:\windows\ai400\method\sst.met
ACI Address: 1 System : 1 Inject#: 11 Detector: CDM
=====

***** EXTERNAL STANDARD REPORT *****

Stop time = 11.50 Minutes Number of Data Points = 3450
Area reject = 1000 One Data Point per 0.2 seconds
Amount Injected = 1 Dilution factor = 101

PEAK NUM	RET TIME	PEAK NAME	CONC. in ug/ml	AREA	REF	% DELTA	BL PEAK	RET TIME
1	0.97	FLUORIDE	6.826e+001	1.114e+004	1880	1	0	0.00%
2	1.53	CHLORIDE	8.847e+001	9.286e+003	1481	1	0	0.00%
3	3.38	NITRATE	7.198e+002	4.647e+004	3617	1	0	0.00%
4	5.32	PHOSPHATE	7.147e+002	2.388e+004	1376	1	0	0.00%
5	6.55	SULFATE	7.260e+002	5.890e+004	2985	1	0	0.00%

File: A:\90021601.D11 Sample: LMCS/6C11HI



Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	WA399937
PROCEDURE/REV	LA-344-105/A-3
TECHNOLOGIST	E. Colvin
DATE	May 30, 1990
TEMPERATURE	N/A
STARTING TIME	1200
ENDING TIME	1330
CHEMIST	R. E. Brandt

Total Organic Carbon from Water Digestion.

	DESCRIPTION	LAB ID
1	Reagent Blank	F0146
2	Initial LMCS Check Std	F0134
3	Sample 89-047	F0135
4	Duplicate of Sample 89-047	F0136
5	Spike of Sample 89-047	F0137
6	Final LMCS Check Std	F0138
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Std.	70C11B/200uL			2.2 mL
Spike	70C11/200uL	F0135/200uL		2.4 mL

COULOMETER ANALYSIS REPORT

TAC TOC Rev. 0

Sample #: F-146

Date #: 05-30-1990

Time #: 12:59:34

Blank == N/D

% Difference == 10

Sample Size == 200

Min Readings == 7

Dilution Factor == 1

Max Readings == 7

==== Reading	==== Analysis Time	==== Coulometer	==== % Difference
1	1.01	0.00	0.00

2	2.01	1.50	100.00
---	------	------	--------

3	3.01	2.50	36.00
---	------	------	-------

4	4.01	3.10	19.33
---	------	------	-------

5	5.01	3.80	18.42
---	------	------	-------

6	6.01	4.50	18.56
---	------	------	-------

7	7.01	5.20	18.46
---	------	------	-------

BLANK VALUE == 5.2 / 7.005799 == .7422423 ug/minute

Sample Run By: 80028

COTOLMETER ANALYSIS REPORT
FICFOC Rev. 0

Sample: F-134

Date: 05-30-1990 Time: 12:47:56
 Blank = .7422423
 % Difference = 1.0
 Min Readings = 11
 Max Readings = 14

== Reading ==	Analysis Time	Cotometer 0.00	Dilution Factor = 1.1	% Difference = 0.00
1	1.01	42.20		
2	2.01		100.00	
3	3.01	49.60	14.92	
4	4.01	53.50	7.29	
5	5.01	55.50	3.60	
6	6.01	56.90	2.46	
7	7.01	58.00	1.90	

(58 = 5.199909) (1.1) / (200) = 2.904005 a/L Carbon
 (59 = 5.197909) (1.1) / (200) (1.2) = .2420004 Polar Carbon

Sample Run Rev: 00003

COUNTERTOP ANALYSIS REPORT
PICTOC Rev. 0

Sample #: P-1335

Date: 05-30-1990 Time: 13:13:14

Batch #: 7422423
% Difference = 1.0

Sample Size = 200
Batch Readiness = 7
Flex Readiness = 7

Reading #1 = 1.01
% Difference = 0.01
Batch Readiness = 7
Flex Readiness = 7

Reading	Previous	Time	Countometer	% Difference	Q, QD
1	1.01		0.00		
2	2.01	35,400	100,000	222,73	
3	3.01	4,400	5,400	108,52	
4	4.01	5,400	6,200	144,90	
5	5.01	6,200	7,000	122,90	
6	6.01	7,000	7,800	111,43	
7	7.01	7,800	8,600	99,09	

(7.7 - 5.2) / (1.1) / (200) = .01375 g/L Carbon
(7.7 - 5.2) / (1.1) / (200) (12) = 1.145933E-03 mole/l Carbon

Sample Run No: 80028

COULOMETER ANALYSIS REPORT
TICLOC Rev. 0

Sample: F-136

Date: 05-30-1990 Times: 13:05:02

Blank = .7422423 Sample Size = 200 Dilution Factor = 1.1
 % Difference = 10 Min Readings = 7 Max Readings = 7

Reading	Analysis Time	Coulometer	% Difference
1	1.01	0.00	0.00

2	2.01	3.20	100.00
3	3.01	4.20	23.81
4	4.01	5.10	17.65
5	5.01	5.80	12.07
6	6.01	6.60	12.12
7	7.01	7.40	10.81

$$(7.4 - 5.200045) (1.1) / (200) = 1.209975E-02 \text{ oz/L Carbon}$$

$$(7.4 - 5.200045) (1.1) / (200) (12) = 1.008313E-03 \text{ Molar Carbon}$$

Sample Run By: 80028

COULOMETER ANALYSIS REPORT
TICDOC Rev. 0

Sampler: F-137 Date: 05-30-1990 Timer: 13:24:30

Blank = .7422423 Sample Size = 200 Dilution Factor = 1.1
 % Difference = 10 Min Readings = 7 Max Readings = 7

	Reading	Analysis Time	Coulometer	% Difference
1	1.01	49.90	49.90	0.0%
2	2.01	98.10	98.10	0.0%
3	3.01	112.70	112.70	0.0%
4	4.01	118.50	118.50	0.0%
5	5.01	121.20	121.20	0.0%
6	6.01	122.70	122.70	0.0%
7	7.01	123.90	123.90	0.0%

$$(123.9 - 5.20068) (1.1) / (200) = .6528463 \text{ avL Carbon}$$

$$(123.9 - 5.20068) (1.1) / (200) (12) = 5.440386E-02 \text{ Molar Carbon}$$

Sample Run By: 90028

COULOMETER ANALYSIS REPORT

TICTOC Rev. 0

Sample: F-138

Date: 05-30-1990 Time: 13:29:41

Blank = .7422423 Sample Size = 200 Dilution Factor = 11
 % Difference = 10 Min Readings = 7 Max Readings = 7

==== Reading ===== Analysis Time ===== Coulometer ===== % Difference =====
 1 1.01 0.00 0.00

2	2.01	45.80	400.00
---	------	-------	--------

3	3.01	53.30	12.20
---	------	-------	-------

4	4.01	56.20	5.16
---	------	-------	------

5	5.01	57.80	2.77
---	------	-------	------

6	6.01	58.90	1.87
---	------	-------	------

7	7.01	59.80	1.51
---	------	-------	------

$$(59.8 - 5.2) (11) / (200) = 3.003 \text{ g/L Carbon}$$

$$(59.8 - 5.2) (11) / (200) (12) = .25025 \text{ Molar Carbon}$$

Sample Run Env. E002E

ACID DIGESTION TEST ANALYSIS

ICP Results

Data Summary

Date Analyzed:	April 19, 1990	Acid Digested LMCS Standard	F1083
Procedure:	LA-505-151/A-0	Reagent Blank	F1084
Analyst:	J. A. White	Segment 89-047	F0140
Digestion	Acid Digestion	Duplicate of Segment 89-047	F0141
Procedure:	LA-505-159/A-0	Spike of F1085	F1087
	LMCS Standard	Acid Digested LMCS Standard	F1088

	Instrument Starting LMCS Standard	Acid Digest. LMCS Standard	Reagent BLANK	Wet Weight Sample	Wet Weight Sample Duplicate	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard
	%	%	ppm	ug/g	ug/g	%	%	%
Aluminum	99.98%		0.07 LT	131520	127597	NOT CALC.	100.63%	100.78%
Antimony	103.50%		-0.01 LT	520	42 LT			105.02%
Barium	102.40%		-0.01 LT	27	-11 LT	103.28%	92.28%	99.56%
Beryllium	96.97%		0.00 LT	1	-2 LT			98.05%
Bismuth	106.71%	102.12%	-0.01 LT	3050	2205	NOT CALC.		109.03%
Boron	99.14%	94.43%	0.03	20 LT	-7 LT	134.81%		96.83%
Cadmium	98.49%	93.46%	0.00 LT	-1 LT	-20 LT	89.32%		97.75%
Calcium	104.77%	102.58%	0.09	321	317	146.72%		101.53%
Cerium	90.42%		-0.31 LT	-18 LT	-1502 LT	15.40%	88.66%	92.18%
Chromium	93.24%		-0.03 LT	267	194	235.92%	84.79%	91.92%
Copper	103.21%	99.09%	-0.01 LT	204	104	100.71%		101.11%
Europium	97.97%		-0.01 LT	-4 LT	-27 LT			97.72%
Iron	101.68%		0.03	6509	5400	NOT CALC.	94.41%	99.61%
Lanthanum	93.47%	91.05%	-0.02 LT	37 LT	-86 LT	89.51%		93.84%
Lead	105.24%	99.04%	0.01 LT	630	168	93.18%		107.33%
Lithium	103.05%		-0.01 LT	-6 LT	-67 LT	91.11%	93.39%	99.74%
Magnesium	102.66%	97.56%	0.02	1304	3102	4138.61%		100.47%
Manganese	100.82%		0.01	4172	3644	NOT CALC.	92.70%	98.92%
Mercury	100.82%		-0.05 LT	-55 LT	-81 LT			100.39%
Molybdenum	96.06%	93.73%	0.00 LT	33	-2 LT	85.72%		96.93%
Nickel	99.55%		-0.01 LT	103	37 LT	98.98%	92.68%	98.62%
Potassium	97.56%	82.65%	-0.53 LT	-574 LT	-2194 LT	73.37%		98.69%
Samarium	96.12%		-0.35 LT	-20 LT	-1702 LT			100.19%
Selenium	103.71%		-0.06 LT	582	151 LT			104.80%
Silver	106.46%		-0.02 LT	9 LT	-84 LT	53.52%		107.84%
Sodium	100.29%	94.66%	0.06 LT	53905	44321	NOT CALC.		99.08%
Strontium	104.00%	100.02%	0.00 LT	548	408	86.77%		101.11%
Sulfur	106.83%		0.03	218	163			101.62%
Tantalum	94.99%		-0.04 LT	-8 LT	-220 LT	27.57%	73.62%	96.37%
Thallium	104.72%		-0.33 LT	4420	-661 LT			106.69%
Thorium	105.11%		-0.18 LT	1910 LT	-954 LT			106.32%
Tin	99.38%		0.02 LT	73	18 LT	102.74%	93.54%	99.14%
Titanium	100.59%		0.13	49	2 LT	90.61%	92.17%	100.87%
Uranium	102.73%		-2.40 LT	10546	515 LT			107.92%
Vanadium	99.30%		-0.02 LT	39	-17 LT			101.25%
Zinc	99.24%	93.05%	0.23	69	183	66.80%		98.76%
Zirconium	99.66%		-0.04 LT	37 LT	-91 LT	46.04%	93.47%	99.94%

LT: Less Than

NC: Not Calibrated

NOT CALC: Not Calculated

Instrument Standards Outside Control Limits

Analytical Batch

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	N/A
PROCEDURE/REV	LA-505-159/A-0
TECHNOLOGIST	D. M. Southwick
DATE	02-01-90
TEMPERATURE	72 C
STARTING TIME	0800
ENDING TIME	1400
CHEMIST	S. A. Jones

Acid Digestion

	DESCRIPTION	LAB ID
1	Reagent Blank	F0147
2	Sample 89-047	F0140
3	Duplicate of Sample 89-047	F0141
4	Spike of Sample 89-047	F0142
5	Sample 89-048	F0164
6	Duplicate of Sample 89-048	F0165
7		
8		
9		
10		
11		

	DESCRIPTION	LAB ID
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQT.VOL.	FINAL VOL. OF STD.
Spike	103C15C/5mL	104C15D/5mL		50mL

Analytical Batch

Page 1 of 2

LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	WB39939
PROCEDURE/Rev	LA-505-151/A-0
TECHNOLOGIST	Janice A. White
DATE	April 19, 1990
TEMPERATURE	N/A
STARTING TIME	0747
ENDING TIME	Not Reported
CHEMIST	S. A. Jones

ICP Analysis of 89-072

Acid Digestion

Only data directly related to
the analysis of 89-047 will be
included in this package.

No inter-element corrections
were made on this data.

	DESCRIPTION	LAB ID
1	Initial LMCS Check Std	N/A
2	Digested Std. (81C11A)	F1083
3	Reagent Blank	F1084
4	Sample Composite 13	F1085
5	Duplicate Composite 13	F1086
6	Spike Composite 13	F1087
7	Digested Std. (82C11A)	F1088
8	LMCS Check Std.	N/A
9	Sample Composite 5	F0899
10	Duplicate Composite 5	F0900
11	Acid Blank	N/A

	DESCRIPTION	LAB ID
12	Sample	89-043
13	Duplicate of Sample	89-043
14	Sample	89-044
15	Duplicate of Sample	89-044
16	LMCS Check Std	N/A
17	Sample	89-047
18	Duplicate of Sample	89-047
19	Sample	89-048
20	Duplicate of Sample	89-048
21	Sample	Composite 8
22	Duplicate of Sample	Composite 8
		F0960

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQUT.VOL.	FINAL VOL. OF STD.
LMCS Check Standard	78C11J/1.0ml	82B3BF/1.0ml	77C11I/1.0ml	11.00 ml
Digested LMCS (1)	81C11A/5.0ml			50.00 ml
Digested LMCS (2)	82C11A/5.0ml			50.00 ml
Spike Composite 13	34C11CO/5.0ml	34C11CK/5.0ml	F1085/0.5143g	50.00 ml

Analytical Batch

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LAB SEGMENT SERIAL #:F0125

CUSTOMER ID:89-047

INSTRUMENT	WB39939
PROCEDURE/REV	LA-505-151/A-0
TECHNOLOGIST	J. A. White
DATE	April 19, 1990
TEMPERATURE	N/A
STARTING TIME	0747
ENDING TIME	Not Reported
CHEMIST	S. A. Jones

ICP Analysis of Sample 89-047

Acid Digestion

Only data directly related to
the analysis of 89-047 will be
included in this package.

No inter-element corrections
were made on this data.

	DESCRIPTION	LAB ID
23	LMCS Check Std.	N/A
24	Sample Composite 15	F1037
25	Duplicate Composite 15	F1038
26	Final LMCS Check Std.	N/A
27		
28		
29		
30		
31		
32		
33		

	DESCRIPTION	LAB ID
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		

STANDARD TYPE	PRIMARY Book # & ALIQUOT VOL.	SECOND Book # & ALIQUOT VOL.	THIRD Bk# & ALQT.VOL.	FINAL VOL. OF STD.
LMCS Check Std.	78C11J/1.0ml	82B38F/1.0ml	77C11I/1.0ml	11.0 ml
Digested LMCS (1)	81C11A/5.0ml			50.0 ml
Digested LMCS (2)	82C11A/5.0ml			50.0 ml
Spike Composite 13	34C11CO/5.0ml	34C11CK/5.0ml	F1085/0.5143g	50.0 ml

ICP Results

Raw Data Summary

Date Analyzed:	April 19, 1990	Acid Digested LMCS Standard	F1083
Procedure:	LA-505-151/A-0	Reagent Blank	F1084
Analyst:	J. A. White	Segment 89-047	F0140
Digestion	Acid Digestion	Duplicate of Segment 89-047	F0141
Procedure:	LA-505-159/A-0	Spike of F1085	F1087
	LMCS Standard	Acid Digested LMCS Standard	F1088

	Instrument Starting LMCS Standard	Acid Digest. LMCS Standard	Reagent BLANK	Wet Weight Sample	Wet Weight Sample Duplicate	Spike Recovery %	LMCS ACID Digestion %	Closing LMCS Standard %
	%	%	ppm	ug/g	ug/g	%	%	%
Aluminum	99.98%		0.07 LT	131520	127597	NOT CALC.	100.63%	100.78%
Antimony	103.50%		-0.01 LT	520	42 LT			105.02%
Arsenic	114.41% #		-0.02 LT	103	-9 LT			114.33% #
Barium	102.40%		-0.01 LT	27	-11 LT	103.28%	92.28%	99.56%
Beryllium	96.97%		0.00 LT	1	-2 LT			98.05%
Bismuth	106.71%	102.12%	-0.01 LT	3050	2205	NOT CALC.		109.03%
Boron	99.14%	94.43%	0.03	20 LT	-7 LT	134.81%		96.83%
Cadmium	98.49%	93.46%	0.00 LT	-1 LT	-20 LT	89.32%		97.75%
Calcium	104.77%	102.58%	0.09	321	317	146.72%		101.53%
Cerium	90.42%		-0.31 LT	-18 LT	-1502 LT	15.40%	88.66%	92.18%
Chromium	93.24%		-0.03 LT	267	194	235.92%	84.79%	91.92%
Cobalt	91.88%		0.02 LT	38 LT	-70 LT	85.08%	86.00%	81.23% #
Copper	103.21%	99.09%	-0.01 LT	204	104	100.71%		101.11%
Europium	97.97%		-0.01 LT	-4 LT	-27 LT			97.72%
Iron	101.68%		0.03	6509	5400	NOT CALC.	94.41%	99.61%
Lanthanum	93.47%	91.05%	-0.02 LT	37 LT	-86 LT	89.51%		93.84%
Lead	105.24%	99.04%	0.01 LT	630	168	93.18%		107.33%
Lithium	103.05%		-0.01 LT	-6 LT	-67 LT	91.11%	93.39%	99.74%
Magnesium	102.66%	97.56%	0.02	1304	3102	4138.61%		100.47%
Manganese	100.82%		0.01	4172	3644	NOT CALC.	92.70%	98.92%
Mercury	100.82%		-0.05 LT	-55 LT	-81 LT			100.39%
Molybdenum	96.06%	93.73%	0.00 LT	33	-2 LT	85.72%		96.93%
Neodymium	85.58% #		-0.64 LT	-933 LT	-2363 LT	NOT CALC.	77.36%	88.11% #
Nickel	99.55%		-0.01 LT	103	37 LT	98.98%	92.68%	98.62%
Phosphorous	114.91% #	93.37%	0.11	1765	1325	NOT CALC.		99.24%
Potassium	97.56%	82.65%	-0.53 LT	-574 LT	-2194 LT	73.37%		98.69%
Samarium	96.12%		-0.35 LT	-20 LT	-1702 LT			100.19%
Selenium	103.71%		-0.06 LT	582	151 LT			104.80%
Silicon	89.48% #	75.18%	0.63	5388	3469	-114.70%		90.19%
Silver	106.46%		-0.02 LT	9 LT	-84 LT	53.52%		107.84%
Sodium	100.29%	94.66%	0.06 LT	53905	44321	NOT CALC.		99.08%
Strontium	104.00%	100.02%	0.00 LT	548	408	86.77%		101.11%
Sulfur	106.83%		0.03	218	163			101.62%
Tantalum	94.99%		-0.04 LT	-8 LT	-220 LT	27.57%	73.62%	96.37%
Thallium	104.72%		-0.33 LT	4420	-661 LT			106.69%
Thorium	105.11%		-0.18 LT	1910 LT	-954 LT			106.32%
Tin	99.38%		0.02 LT	73	18 LT	102.74%	93.54%	99.14%
Titanium	100.59%		0.13	49	2 LT	90.61%	92.17%	100.87%
Tungsten	82.47% #		-0.02 LT	135	24 LT			82.74% #
Uranium	102.73%		-2.40 LT	10546	515 LT			107.92%
Vanadium	99.30%		-0.02 LT	39	-17 LT			101.25%
Zinc	99.24%	93.05%	0.23	69	183	66.80%		98.76%
Zirconium	99.66%		-0.04 LT	37 LT	-91 LT	46.04%	93.47%	99.94%

LT: Less Than

NC: Not Calibrated

NOT CALC: Not Calculated

Instrument Standards Outside Control Limits

ICP Results

Raw Data

Page 1 of 4

Date Analyzed:	April 19, 1990	Acid Digested LMCS Standard	F1083
Procedure:	LA-505-151/A-0	Reagent Blank	F1084
Analyst:	J. A. White	Segment 89-047	F0140
Digestion	Acid Digestion	Duplicate of Segment 89-047	F0141
Procedure:	LA-505-159/A-0	Spike of F1085	F1087
	LMCS Standard	Acid Digested LMCS Standard	F1088

Digestion
Weight
Volume
Sample

	Starting LMCS Standard Instrument Standard ppm	Recovery %	LMCS Acid Digestion Standard ppm	Acid Digestion Standard Recovery %	Reagent Blank ppm	Dilution Three ppm
	SST-1	SST-2	SST-3			
Aluminum			49.99	99.98%		0.07 LT
Antimony	10.35			103.50%		-0.01 LT
Arsenic			57.21	114.41% #		-0.02 LT
Barium	10.24			102.40%		-0.01 LT
Beryllium			9.70	96.97%		0.00 LT
Bismuth		53.46		106.71%	10.21	102.12% -0.01 LT
Boron	9.91			99.14%	9.44	94.43% 0.03
Cadmium	9.85			98.49%	9.35	93.46% 0.00 LT
Calcium	10.48			104.77%	10.26	102.58% 0.09
Cerium	9.04			90.42%		-0.31 LT
Chromium	9.32			93.24%		-0.03 LT
Cobalt	9.19			91.88%		0.02 LT
Copper	10.32			103.21%	9.91	99.09% -0.01 LT
Europium		9.80		97.97%		-0.01 LT
Iron	10.17			101.68%		0.03
Lanthanum		46.83		93.47%	9.11	91.05% -0.02 LT
Lead		52.72		105.24%	9.90	99.04% 0.01 LT
Lithium	10.31			103.05%		-0.01 LT
Magnesium	10.27			102.66%	9.76	97.56% 0.02
Manganese	10.08			100.82%		0.01
Mercury			25.21	100.82%		-0.05 LT
Molybdenum			48.03	96.06%	9.35	93.73% 0.00 LT
Neodymium	8.56			85.58% #		-0.64 LT
Nickel	9.96			99.55%		-0.01 LT
Phosphorous			57.45	114.91% #	9.34	93.37% 0.11
Potassium	24.39			97.56%	8.27	82.65% -0.53 LT
Samarium		9.61		96.12%		-0.35 LT
Selenium			51.86	103.71%		-0.06 LT
Silicon			44.74	89.48% #	7.52	75.18% 0.63
Silver		10.65		106.46%	7.42	-0.02 LT
Sodium	25.07			100.29%	9.47	94.66% 0.06 LT
Strontium	10.40			104.00%	10.00	100.02% 0.00 LT
Sulfur			53.41	106.83%		0.03
Tantalum			47.50	94.99%		-0.04 LT
Thallium			52.36	104.72%		-0.33 LT
Thorium		52.66		105.11%		-0.18 LT
Tin	49.69			99.38%		0.02 LT
Titanium			50.30	100.59%		0.13
Tungsten			20.62	82.47% #		-0.02 LT
Uranium		51.47		102.73%		-2.40 LT
Vanadium			9.93	99.30%		-0.02 LT
Zinc	9.92			99.24%	9.31	93.05% 0.23
Zirconium			49.83	99.66%		-0.04 LT
Dilution Factor	1.00	1.00	1.00		10.00	1.00

ICP Results

Raw Data

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	0.01112 g/mL			0.00978 g/mL			0.01029 g/mL		
	Sample	Sample	Digestion Weight	Sample Volume	Sample	Digestion Weight	Sample Volume	Sample	Spike of Sample
	Dilution	Dilution	Duplicate Dilution	Duplicate Dilution	Duplicate Dilution	Dilution	Dilution	Dilution	Spike of Sample
	Two ppm	One ppm	Three ppm	Two ppm	One ppm	Three ppm	Two ppm	One ppm	
Aluminum	1462.50	1410.10		1247.90	1232.40		507.09	473.99	
Antimony	22.83	5.78		-3.48	0.41 LT		13.40	14.24	
Arsenic	3.86	1.15		-2.97	-0.09 LT		-0.58	1.02	
Barium	0.80	0.30		-1.72	-0.11 LT		10.83	10.57	
Beryllium	0.15	0.02		-0.10	-0.02 LT		0.02	0.03	
Bismuth	43.23	33.91		2.42	21.56		160.79	176.36	
Boron	1.85	0.22 LT		-1.20	-0.07 LT		14.10	10.25	
Cadmium	0.09	-0.01 LT		-1.07	-0.20 LT		9.00	10.03	
Calcium	3.57	3.05		3.10	2.54		20.40	14.91	
Cerium	19.44	-0.20 LT		-68.82	-14.69 LT		-30.01	1.54 LT	
Chromium	0.46	2.97		-2.68	1.90		30.54	19.37	
Cobalt	0.38	0.42 LT		-4.40	-0.68 LT		8.30	9.83	
Copper	3.54	2.27		-2.11	1.02		9.26	10.82	
Europium	0.35	-0.04 LT		-1.30	-0.27 LT		-0.57	0.04 LT	
Iron	72.38	69.04		52.81	51.38		218.35	212.56	
Lanthanum	3.00	0.41 LT		-3.91	-0.84 LT		7.16	9.85	
Lead	25.82	7.01		2.15	1.64		17.21	20.87	
Lithium	1.32	-0.07 LT		-2.89	-0.65 LT		9.24	10.65	
Magnesium	14.50	9.49		30.33	11.25		416.09	37.95	
Manganese	46.39	44.63		35.64	34.98		56.88	57.54	
Mercury	-0.19	-0.62 LT		-4.55	-0.80 LT		-2.46	-0.27 LT	
Molybdenum	1.69	0.37		-1.23	-0.02 LT		8.93	9.87	
Neodymium	-20.25	-10.38 LT		-106.70	-23.11 LT		-66.75	0.47 LT	
Nickel	2.03	1.15		-1.92	0.36 LT		9.91	11.36	
Phosphorous	30.89	19.62		16.41	12.96		116.71	118.22	
Potassium	9.74	-6.39 LT		-106.50	-21.46 LT		-34.01	9.41	
Samarium	24.85	-0.22 LT		-80.79	-16.65 LT		-36.47	0.62 LT	
Selenium	15.08	6.47		-12.92	1.48 LT		7.17	9.37	
Silicon	59.92	38.94		28.27	33.93		42.19	25.60	
Silver	1.65	0.10 LT		-4.62	-0.82 LT		4.89	5.71	
Sodium	599.42	5743.69		433.46	447.21		838.67	827.74	
Strontium	6.10	5.70		3.99	4.49		14.46	14.97	
Sulfur	5.64	2.43		-0.04	1.60		67.98	12.69	
Tantalum	4.73	-0.09 LT		-9.95	-2.16 LT		-0.70	3.53	
Thallium	49.15	7.89		-68.07	-6.46 LT		-18.49	7.30	
Thorium	21.24	-0.33 LT		-49.12	-9.33 LT		-19.12	2.21	
Tin	2.23	0.81		-1.39	0.18 LT		14.05	10.97	
Titanium	1.22	0.54		-2.05	0.02 LT		9.35	9.90	
Tungsten	4.59	1.50		-4.62	0.24 LT		-2.06	1.00	
Uranium	248.03	117.27		-402.90	5.04 LT		-175.80	60.96	
Vanadium	2.26	0.44		-2.81	-0.17 LT		-0.93	0.32 LT	
Zinc	1.58	0.77		1.79	0.77		25.48	13.50	
Zirconium	2.99	0.41 LT		-7.23	-0.89 LT		1.83	5.97	
Dilution Factor	101.00	21.00	1.00	101.00	21.00	1.00	101.00	21.00	

ICP Results

Raw Data

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LMCS Standard

	Spike Recovery	Standard LMCS Acid Digestion %	Acid Digestion Standard Recovery %	Ending LMCS Standard Recovery %	Spike Standard LMCS ppm added	Spike Standard ID Book #
				SST-1 SST-2 SST-3		
Aluminum	NOT CALC.	10.06	100.63%	50.39	100.78%	10.00
Antimony			10.50		105.02%	
Arsenic				57.16	114.33% #	
Barium	103.28%	9.23	92.28%	9.96	99.56%	10.00
Beryllium				9.81	98.05%	
Bismuth	NOT CALC.			54.63	109.03%	10.00
Boron	134.81%		9.68		96.83%	10.00
Cadmium	89.32%		9.78		97.75%	10.00
Calcium	146.72%		10.15		101.53%	10.00
Cerium	15.40%	8.87	88.66%	9.22	92.18%	10.00
Chromium	235.92%	8.56	84.79%	9.19	91.92%	10.00
Cobalt	85.08%	8.60	86.00%	8.12	81.23% #	10.00
Copper	100.71%		10.11		101.11%	10.00
Europium				9.77	97.72%	
Iron	NOT CALC.	9.44	94.41%	9.96	99.61%	10.00
Lanthanum	89.51%			47.01	93.84%	10.00
Lead	93.18%			53.77	107.33%	10.00
Lithium	91.11%	9.34	93.39%	9.97	99.74%	10.00
Magnesium	4138.61%			10.05	100.47%	10.00
Manganese	NOT CALC.	9.27	92.70%	9.89	98.92%	10.00
Mercury				25.10	100.39%	
Molybdenum	85.72%			48.47	96.93%	10.00
Neodymium	NOT CALC.	7.74	77.36%	8.81	88.11% #	10.00
Nickel	98.98%	9.27	92.68%	9.86	98.62%	10.00
Phosphorous	NOT CALC.			49.62	99.24%	10.00
Potassium	73.37%		24.67		98.69%	10.00
Samarium				10.02	100.19%	
Selenium				52.40	104.80%	
Silicon	-114.70%			45.09	90.19%	10.00
Silver	53.52%			10.78	107.84%	10.00
Sodium	NOT CALC.		24.77		99.08%	10.00
Strontium	86.77%		10.11		101.11%	10.00
Sulfur				50.81	101.62%	
Tantalum	27.57%	7.33	73.62%		48.18	96.37%
Thallium				53.35	106.69%	9.95
Thorium				53.27	106.32%	
Tin	102.74%	9.35	93.54%	49.57	99.14%	10.00
Titanium	90.61%	9.23	92.17%		50.44	100.87%
Tungsten				20.68	82.74% #	10.00
Uranium		5.01		54.07	107.92%	
Vanadium					10.13	101.25%
Zinc	66.80%			9.88		98.76%
Zirconium	46.04%	9.33	93.47%		49.97	99.94%
Dilution Factor		10.00		1.00	1.00	9.98

ICP Results

Raw Data

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		LMCS Standards Values	LMCS Standard IDs Book	ACID DIGESTION LMCS STANDARD VALUES	ACID DIGEST. LMCS IDs Book
	SST-1	SST-2	ppm SST-3	#	ppm in Sample
Aluminum			50.00		100.00
Antimony	10.00				
Arsenic			50.00		
Barium	10.00				100.00
Beryllium			10.00		
Bismuth		50.10			100.00
Boron	10.00				100.00
Cadmium	10.00				100.00
Calcium	10.00				100.00
Cerium	10.00				100.00
Chromium	10.00				100.90
Cobalt	10.00				100.00
Copper	10.00				100.00
Europium		10.00			
Iron	10.00				100.00
Lanthanum		50.10			100.00
Lead		50.10			100.00
Lithium	10.00				100.00
Magnesium	10.00				100.00
Manganese	10.00				100.00
Mercury		25.00			
Molybdenum		50.00		99.80	
Neodymium	10.00				100.00
Nickel	10.00				100.00
Phosphorous		50.00			100.00
Potassium	25.00				100.00
Samarium		10.00			
Selenium			50.00		
Silicon			50.00		100.00
Silver		10.00			
Sodium	25.00				100.00
Strontium	10.00				100.00
Sulfur			50.00		
Tantalum			50.00		99.50
Thallium			50.00		
Thorium		50.10			
Tin	50.00				100.00
Titanium			50.00		100.10
Tungsten			25.00		
Uranium		50.10			
Vanadium			10.00		
Zinc	10.00				100.00
Zirconium			50.00		99.80
Dilution Factor				10.00	

ICP Data Report - Acid Blank - (File 1)

NAME	MV	INT	CONCEN	RSID
Al	1.95	-0.199	-21.62	
Sb	0.37	-0.039	-57.28	
As	1.07	-0.031	-35.43	
Ba	3.85	(-0.015	-13.46	
Be	0.69	-0.001	-22.94	
Bi	3.76	-0.167	-9.26	
B	4.49	-0.013	-14.19	
Cd	2.28	-0.006	-3.54	
Ca	0.48	-0.000	-37.80	
Ce	5.20	-0.534	-14.27	
Cr	1.29	(-0.058	-5.90	
Co	0.26	0.000	*****	
Cu	2.88	-0.028	-14.78	
Eu	4.02	(-0.010	-11.14	
Fe	1.60	-0.012	-22.18	
La	0.35	-0.032	-18.33	
Pb	0.26	-0.043	-144.34	
Li	4.01	-0.007	-68.58	
Mg	0.44	-0.001	-18.92	
Mn	0.75	-0.002	-13.86	
Hg	3.89	(-0.049	-7.27	
Ho	1.64	-0.012	-21.56	
Nd	5.38	(-0.906	-8.91	
Ni	3.33	-0.020	-11.69	
P	1.27	-0.004	-531.46	
K	3.27	-0.775	-14.72	
Sm	4.99	-0.623	-14.98	
Se	1.70	-0.139	-26.84	
Si	3.23	-0.092	-17.41	
Ag	14.76	-0.035	-15.37	
Na	5.35	-0.253	-15.23	
Sr	3.62	-0.006	-14.57	
S	0.72	-0.044	-1.67	
Ta	3.63	-0.073	-14.82	
Tl	4.16	(-0.701	-13.24	
Th	1.05	-0.376	-21.29	
Sn	1.31	-0.018	-20.97	
Ti	3.46	-0.020	-13.00	
W	1.30	(-0.059	-20.24	
U	5.04	-3.735	-13.04	
V	4.16	(-0.031	-11.46	
Zn	2.34	-0.003	-39.44	
Zr	4.59	-0.058	-14.15	

ICP Data Report - LMCS Check Standard 78C11J - (File 2)

Sample name : 78C11J
 Sample code 1 : SST1
 Sample code 2 : DIRECT
 Programme : SST 19-Apr-90 08:40:34

NAME	MV	INT	CONCEN	RSD
Al	2.02	-0.013	-393.95	
Sb	1.08	10.306	1.08	
As	1.17	0.057	24.65	
Ba	143.20	10.145	0.69	
Be	0.72	0.001	30.70	
Bi	3.92	-0.009	-390.64	
B	134.59	9.966	0.37	
Cd	160.15	9.875	0.17	
Ca	204.52	10.427	0.74	
Co	10.07	9.035	0.59	
Cr	32.84	9.427	0.43	
Co	2.89	9.818	0.57	
Cu	50.17	10.260	0.51	
Eu	4.60	0.016	11.83	
Fe	63.21	10.098	0.40	
La	0.37	0.048	20.40	
Pb	0.27	0.028	43.30	
Li	89.66	10.357	0.50	
Mg	214.58	10.251	0.47	
Mn	136.15	10.079	0.34	
Hg	3.95	(-0.044	-7.94	
Mo	1.75	0.008	48.40	
Nd	10.71	8.972	2.24	
Ni	80.53	9.975	0.19	
P	1.35	0.061	36.28	
K	8.43	24.525	0.30	
Sm	5.01	-0.575	-22.70	
Se	3.40	3.272	0.48	
Si	9.31	-0.040	-45.96	
Ag	14.91	-0.028	-26.79	
Na	32.79	24.917	0.33	
Sr	254.70	10.283	0.68	
S	0.91	0.200	8.19	
Ta	9.70	-0.043	-44.43	
Tl	4.39	-0.106	-120.90	
Th	1.09	-0.053	-167.03	
Sn	117.72	49.380	0.22	
Ti	3.49	-0.016	-24.97	
W	1.60	0.175	7.38	
U	5.39	1.077	66.40	
V	4.28	-0.017	-33.23	
Zn	305.53	9.904	0.18	
Zr	4.65	-0.038	-36.27	

17300

ICP Data Report - LMCS Check Standard 82B38F - (File 3)

Sample name : 82B38F
 Sample code 1 : SST2
 Sample code 2 : DIRECT
 Programme : SST 19-Apr-90 08:52:57

NAME	MV	INT	CONCEN	RSD
Al	3.67	4.203	1.52	
Sb	0.42	0.659	5.63	
As	2.98	1.548	2.05	
Ba	4.30	0.017	14.28	
Be	0.74	0.001	27.77	
Bi	57.46	54.091	0.47	
B	5.40	0.058	3.39	
Cd	2.48	0.007	10.95	
Ca	0.73	0.012	1.25	
Ce	5.75	0.550	14.46	
Cr	1.68	0.058	5.97	
Co	0.28	0.062	6.00	
Cu	4.10	0.238	1.78	
Eu	217.80	9.748	0.28	
Fe	2.08	0.067	27.96	
La	12.43	146.675	0.17	
Pb	2.77	53.326	0.33	
Li	4.43	0.044	19.70	
Mg	0.59	0.006	0.74	
Mn	0.91	0.010	2.54	
Hg	4.56	-0.005	-52.91	
Mo	1.83	0.022	7.87	
Nd	6.12	0.465	22.94	
Ni	3.69	0.027	19.97	
P	1.65	0.308	7.52	
K	3.40	-0.167	-32.75	
Sm	9.47	10.049	0.83	
Se	1.93	0.319	5.03	
Si	4.21	0.563	3.60	
Ag	244.24	10.691	0.28	
Na	5.66	0.036	89.17	
Sr	3.95	0.008	12.55	
S	0.87	0.140	11.23	
Ta	4.22	0.173	9.35	
Tl	6.75	5.881	1.93	
Th	7.80	52.868	0.36	
Sn	1.44	0.080	3.41	
Ti	4.14	0.059	6.67	
W	1.42	0.038	72.86	
U	9.18	54.596	1.19	
V	6.31	0.233	1.69	
Zn	2.69	0.009	9.21	
Zr	5.15	0.132	7.08	

18226

ICP Data Report - LMCS Check Standard 77C11I - (File 4)

Sample name : 77C11I
 Sample code 1 : SST3
 Sample code 2 : DIRECT
 Programme : SST

19-Apr-90 09:02:22

18244

NAME	MV	INT	CONCEN	RSD
Al	21.57	50.973	0.24	
Sb	0.46	1.263	5.26	
As	71.94	58.350	0.32	
Ba	4.29	0.017	10.32	
Be	244.28	10.097	1.69	
Bi	4.89	0.971	1.41	
K	5.42	0.059	5.14	
Cd	2.61	0.015	11.90	
Ca	0.75	0.013	0.67	
Cr	5.51	0.073	85.92	
Cr	1.50	0.005	95.47	
Co	0.29	0.115	6.52	
Cu	3.27	0.058	6.13	
Eu	4.27	0.002	74.28	
Fe	1.95	0.046	3.70	
La	0.37	0.027	24.74	
Pb	0.28	0.390	8.33	
Li	4.13	0.007	40.18	
Mg	0.52	0.003	1.60	
Mn	1.04	0.019	1.02	
Hg	399.37	25.808	0.56	
Mo	293.51	49.758	0.43	
Nd	5.79	-0.158	-100.24	
Ni	7.41	0.510	0.95	
P	66.26)54.245	1.07	
K	3.40	-0.132	-80.12	
Sm	5.31	0.147	53.52	
Se	28.39	53.466	0.71	
Si	72.02	46.228	0.06	
Ag	22.28	0.316	0.94	
Na	5.78	0.146	19.94	
Sr	3.87	0.004	21.45	
S	42.73)52.076	0.82	
Ia	122.84	49.478	0.72	
Tl	25.50	53.560	0.57	
Th	1.22	0.983	4.04	
Sn	1.71	0.193	0.76	
Ti	447.29	51.373	0.16	
W	28.21	21.266	0.47	
U	6.19	12.420	1.28	
V	86.99	10.184	2.07	
Zn	3.56	0.037	2.26	
Zr	154.39	50.756	0.11	

ICP Data Report - Acid Digested Standard 81C11A - (File 5)

Sample name : F1083
 Sample code 1 : 81C11A
 Sample code 2 : DIRECT
 Sample code 3 : DIGEST
 Programme : SST 19-Apr-90 09:07:31

NAME	MV	INT	CONCEN	RSN
Al	2.11	0.228	31.49	
St	0.37	-0.049	-180.83	
As	1.44	0.275	9.55	
Ba	3.83	(-0.017	-20.65	
Be	0.70	-0.000	-141.52	
Ni	14.03	10.212	0.64	
H	127.77	9.443	0.82	
Cd	151.70	9.346	1.27	
Ca	201.23	10.258	0.57	
Ce	5.08	(-0.772	-15.81	
Cr	1.39	(-0.030	-21.13	
Co	0.26	-0.012	-51.96	
Cu	48.56	9.909	0.71	
Eu	3.88	(-0.016	-17.94	
Fe	1.84	0.028	23.66	
La	2.71	9.105	0.51	
Pb	0.73	9.904	1.43	
Li	3.82	(-0.031	-22.41	
Mg	204.24	9.756	0.53	
Mn	0.89	0.008	16.27	
Hg	3.96	(-0.043	-19.37	
Mo	56.56	9.354	0.88	
Nd	5.41	(-0.864	-24.79	
Ni	3.28	(-0.025	-31.55	
P	12.46	9.337	3.79	
K	5.12	8.265	0.63	
Sm	4.80	(-1.072	-13.13	
Se	1.70	-0.151	-53.17	
Si	14.54	7.518	6.68	
Ag	174.24	7.419	0.59	
Na	15.94	9.466	0.71	
Sr	247.86	10.002	0.60	
S	0.93	0.222	5.59	
Ta	3.50	(-0.126	-22.37	
Tl	4.00	(-1.116	-14.91	
Th	1.02	(-0.573	-16.68	
Sn	1.47	0.092	9.79	
Ti	4.84	0.140	3.27	
W	1.52	0.110	21.00	
U	4.90	(-5.829	-16.47	
V	4.04	(-0.046	-11.84	
Zn	287.21	9.305	0.41	
Zr	4.46	(-0.105	-14.92	

ICP Data Report - Reagent Blank - (File 6)

Sample name : F1084
 Sample code 1 : REAGEN
 Sample code 2 : DIRECT
 Sample code 3 : 000013
 Programme : SST 19-Apr-90 09:12:39

NAME	MV	INT	CONCEN	RSD
A1	2.05	0.068	59.96	
Sb	0.38	-0.005	-916.63	
As	1.08	-0.022	-50.24	
Ba	3.96	-0.008	-35.37	
Be	0.71	0.000	28.39	
Bi	3.92	-0.006	-797.45	
B	5.08	0.033	2.92	
Cd	2.38	0.000	6376.32	
Ca	2.16	0.085	0.70	
Ce	5.32	-0.306	-35.66	
Cr	1.39	(-0.029	-12.21	
Co	0.27	0.022	34.69	
Cu	2.95	-0.011	-37.31	
Eu	4.09	-0.007	-27.58	
Fe	1.87	0.032	14.36	
La	0.35	-0.022	-50.94	
Pb	0.27	0.014	150.01	
Li	3.99	-0.010	-47.62	
Mg	0.78	0.015	7.20	
Mn	0.92	0.011	4.16	
Hg	2.83	(-0.053	-9.08	
Mo	1.69	-0.003	-74.48	
Nd	5.53	(-0.640	-21.86	
Ni	3.42	-0.008	-60.28	
P	1.41	0.114	12.79	
K	3.32	-0.528	-24.44	
Sm	5.10	-0.354	-30.58	
Se	1.74	-0.064	-26.70	
Si	4.31	0.631	16.43	
Ag	15.13	-0.018	-28.50	
Na	5.69	0.059	76.28	
Sr	3.70	-0.003	-40.42	
S	0.78	0.034	6.50	
Ta	3.72	-0.035	-47.06	
Tl	4.30	-0.331	-21.52	
Th	1.07	-0.176	-43.95	
Sn	1.29	0.016	107.80	
Ti	4.74	0.129	2.06	
W	1.35	-0.019	-35.11	
U	5.14	-2.399	-29.80	
V	4.29	-0.016	-21.91	
Zn	9.48	0.231	1.22	
Zr	4.66	-0.036	-34.15	

ICP Data Report - Sample F1085 - (File 7)

Sample name : F1085
 Sample code 1 : SAMPLE
 Sample code 2 : 100-10
 Sample code 3 : 000013
 Programme : SST 19-Apr-90 09:17:05

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	4.10	5.418	547.20✓	0.81	
Sb	0.39	0.172	17.373	26.19	
As	1.12	0.018	1.858	22.98	
Ba	4.18	0.009	0.869	19.07	
Be	0.74	0.001	0.134	6.25	
Bi	5.40	1.487	150.15✓	0.66	
B	4.98	0.025	2.561	3.21	
Cd	2.39	0.001	0.072	49.13	
Ca	1.52	0.053	5.321✓	1.22	
Ce	5.59	0.232	23.469✓	27.20	
Cr	1.70	0.064	6.459✓	5.18	
Co	0.27	0.045	4.527	19.24	
Cu	3.08	0.017	1.706	17.32	
Eu	4.31	0.003	0.324	42.80	
Fe	9.83	1.338	135.13✓	0.88	
La	0.37	0.024	2.474	18.23	
Pb	0.20	0.234	23.663	20.99	
Li	4.15	0.009	0.949	34.77	
Mg	0.88	0.021	2.071✓	14.02	
Mn	8.02	0.540	54.494✓	1.44	
Hg	4.11	(-0.034	(-3.456	-7.45	
Mo	1.76	0.009	0.878	11.15	
Nd	5.72	--0.292	-29.50	-43.58	
Ni	3.64	0.021	2.105	5.99	
P	2.14	0.719	72.620✓	2.26	
K	3.47	0.186	18.822	42.10	
Sm	5.35	0.236	23.804	30.12	
Se	1.83	0.123	12.444	2.49	
Si	4.10	0.494	49.851✓	6.26	
Ag	15.84	0.015	1.525	30.69	
Na	13.44	7.173	724.43✓	0.45	
Sr	3.07	0.053	5.376✓	0.58	
S	0.83	0.100	10.050	22.91	
Ta	3.86	0.025	2.561	59.21	
Tl	4.57	0.337	33.990	23.79	
Th	1.12	0.200	20.179✓	21.98	
Sn	1.30	0.021	2.141	26.56	
Ti	3.70	0.008	0.850	22.37	
W	1.42	0.035	3.496	22.08	
U	5.45	1.924	194.34	20.58	
V	4.55	0.016	1.657	20.90	
Zn	7.71	0.173	17.465✓	0.60	
Zr	4.86	0.032	3.278	26.87	

Dilution factor : 101.000

ICP Data Report - Sample F1085 - (File 8)

Sample name : F1085
 Sample code 1 : SAMPLE
 Sample code 2 : 500-10
 Sample code 3 : 000013
 Programme : SST 19-Apr-90 09:21:46

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	11.60	24.956	524.07	0.56	
Sb	0.39	0.260	5.470✓	16.34	
As	1.15	0.039	0.813✓	8.06	
Ba	4.37	0.022	0.467✓	12.31	
Be	0.74	0.001	0.031✓	4.81	
Bi	10.44	6.584	138.27	0.67	
B	5.01	0.027	0.574✓	6.67	
Cd	2.42	0.003	0.060✓	20.70	
Ca	4.15	0.187	3.925	0.36	
Ce	5.57	0.193	4.055✓	58.07	
Cr	2.94	0.438	9.193✓	1.38	
Co	0.28	0.059	1.229✓	38.30	
Cu	3.16	0.033	0.700✓	13.37	
Hg	4.30	0.003	0.058	65.98	
Fe	40.70	6.404	134.48	0.29	
La	0.37	0.040	0.839✓	24.35	
Pb	0.29	0.511	10.735✓	9.62	
Li	4.12	0.006	0.124	69.90	
Mg	1.83	0.066	1.386	0.29	
Mn	35.10	2.555	53.656	0.20	
Hg	4.19	(-0.029	(-0.601✓	-9.82	
Mo	1.80	0.016	0.335✓	13.38	
Nd	5.69	-0.342	-7.186✓	-44.51	
Ni	3.97	0.065	1.356✓	11.66	
P	4.85	2.984	62.670✓	2.21	
K	3.45	0.092	1.922✓	144.38	
Sm	5.32	0.163	3.416✓	77.57	
Se	1.92	0.308	6.468✓	13.53	
Si	5.65	1.533	32.198	3.75	
Ag	15.85	0.016	0.331✓	51.33	
Na	42.19	33.545	704.44	0.20	
Sr	9.71	0.243	5.110	0.21	
S	1.07	0.402	8.438✓	1.10	
Ta	3.88	0.035	0.730✓	17.69	
Tl	4.58	0.371	7.797✓	35.95	
Th	1.12	0.163	3.423	66.05	
Sn	1.33	0.031	0.644✓	24.10	
Ti	3.74	0.013	0.264✓	30.83	
W	1.45	0.057	1.193✓	6.08	
U	5.59	3.938	82.692✓	18.67	
V	4.54	0.015	0.325✓	42.05	
Zn	5.64	0.105	2.214	0.59	
Zr	4.94	0.061	1.278✓	17.58	

Dilution factor : 21.0000

ICP Data Report - Spike of Sample F1085 - (File 11)

Sample name : F1087
 Sample code 1 : SPIKE
 Sample code 2 : 100-10
 Sample code 3 : 000013
 Programme : SST 19-Apr-90 09:33:58

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	3.95	5.021	507.09	0.42	
Sb	0.39	0.133	13.402	29.40	
As	1.10	-0.006	-0.582	-151.41	
Ba	5.53	0.107	10.831	1.87	
Be	0.71	0.000	0.020	152.03	
Bi	5.50	1.592	160.79	3.06	
B	6.47	0.140	14.099	0.89	
Cd	3.80	0.089	8.997	1.16	
Ca	4.44	0.202	20.399	1.38	
Ce	5.32	-0.297	-30.01	-40.41	
Cr	3.49	0.302	30.544	0.76	
Co	0.28	0.082	8.300	9.46	
Cu	3.43	0.092	9.264	5.83	
Eu	4.12	-0.006	-0.566	-43.79	
Fe	14.85	2.162	218.35	1.12	
La	0.38	0.071	7.161	15.75	
Pb	0.27	0.170	17.210	14.43	
Li	4.83	0.092	9.244	4.74	
Mg	86.51	4.120	416.09	1.10	
Mn	8.34	0.563	56.883	1.21	
Hg	4.26	(-0.024	(-2.461	-12.56	
Mo	2.22	0.088	8.933	1.90	
Nd	5.52	(-0.661	(-66.75	-21.22	
Ni	4.23	0.098	9.907	5.58	
P	2.66	1.156	116.71	3.69	
K	3.36	-0.337	-34.01	-45.88	
Sm	5.10	-0.361	-36.47	-40.03	
Se	1.81	0.071	7.169	63.81	
Si	3.99	0.418	42.189	4.24	
Ag	16.55	0.048	4.889	84.71	
Na	14.68	8.304	838.67	0.63	
Sr	7.26	0.143	14.464	0.43	
S	1.29	0.673	67.976	0.29	
Ta	3.78	-0.007	-0.700	-235.49	
Tl	4.36	-0.183	-19.49	-62.27	
Th	1.07	-0.189	-19.12	-43.37	
Sn	1.58	0.139	14.047	4.75	
Ti	4.43	0.093	9.345	3.03	
W	1.35	-0.020	-2.055	-73.65	
U	5.19	-1.741	-175.8	-51.50	
V	4.34	-0.009	-0.926	-39.04	
Zn	10.14	0.252	25.479	0.53	
Zr	4.82	0.018	1.827	70.96	

Dilution factor : 101.000

Sample name : F1087
 Sample code 1 : SPIKE
 Sample code 2 : 500-10
 Sample code 3 : 000013
 Programme : SST 19-Apr-90 09:38:10

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	10.68	23.571	473.99	0.53	

ICP Data Report - Spike of F1085 - (File 12)

Sample name : F1085
 Sample code 1 : SPIKE
 Sample code 2 : 500-10
 Sample code 3 : 000013
 Programme : SST 19-Apr-90 09:38:10

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	10.68	22.571	473.99	0.53	
Si	0.42	0.678	14.242	4.35	
As	1.16	0.049	1.021	14.61	
Ba	10.96	0.503	10.565	0.24	
Be	0.74	0.001	0.028	8.84	
Bi	12.24	8.398	176.36	0.47	
Br	11.02	0.488	10.254	1.00	
Cd	10.01	0.477	10.026	0.88	
Ca	14.39	0.710	14.914	0.51	
Ce	5.51	0.073	1.540	73.99	
Cr	4.55	0.922	19.370	0.00	
Co	0.39	0.468	9.831	5.31	
Cu	5.38	0.515	10.824	0.23	
Eu	4.28	0.002	0.040	45.94	
Fe	63.36	10.122	212.56	0.37	
La	0.48	0.469	9.854	1.26	
Pb	0.31	0.994	20.873	0.00	
Li	8.26	0.507	10.652	0.10	
Mg	38.20	1.807	37.950	0.31	
Mn	37.58	2.740	57.543	0.62	
Hg	4.44	-0.013	-0.265	-7.65	
Mo	4.46	0.470	9.871	1.15	
Nd	5.88	0.022	0.468	646.39	
Ni	7.65	0.541	11.350	0.70	
P	8.02	5.630	118.22	1.18	
K	3.52	0.448	9.406	8.78	
Sm	5.27	0.029	0.617	172.07	
Se	1.99	0.446	9.365	1.19	
Si	5.18	1.219	25.604	0.66	
Ag	21.33	0.272	5.708	16.77	
Na	48.60	39.416	827.74	0.16	
Sr	21.16	0.713	14.969	0.35	
S	1.23	0.604	12.688	1.78	
Ta	4.21	0.168	3.529	0.14	
Tl	4.57	0.348	7.299	14.95	
Th	1.11	0.105	2.208	41.76	
Sn	2.49	0.522	10.967	0.69	
Ti	7.70	0.471	9.897	0.22	
W	1.44	0.048	0.999	11.10	
U	5.51	2.903	60.957	11.26	
V	4.54	0.015	0.319	23.24	
Zn	22.10	0.643	13.503	0.69	
Zr	5.60	0.284	5.970	1.20	

Dilution factor : 21.0000

ICP Data Report - Acid Digested Standard 82C11A - (File 13)

Sample name : F1008
 Sample code 1 : DIGEST
 Sample code 2 : DIRECT
 Sample code 3 : 000013
 Programme : SST 19-Apr-90 09:43:08

NAME	MV	INT	CONCEN	RSD
Al	5.88	10.063	1.45	
Sb	0.39	0.246	18.33	
As	1.42	0.262	2.83	
Ba	130.62	9.228	1.74	
Be	0.79	0.004	4.42	
Bi	4.21	0.280	13.02	
B	5.31	0.050	11.73	
Cd	2.52	0.009	21.14	
Ca	5.75	0.269	1.09	
Ce	9.99	8.866	0.56	
Cr	29.93	0.555	1.03	
Co	2.56	8.600	3.63	
Cu	3.10	0.019	29.28	
Eu	4.70	0.021	4.16	
Fe	59.21	9.441	1.52	
La	0.38	0.083	9.76	
Pb	0.28	0.341	18.04	
Li	81.25	9.339	2.39	
Mg	2.33	0.090	1.83	
Mn	125.29	9.270	1.65	
Hg	4.47	-0.010	-47.80	
Mo	1.89	0.031	8.35	
Nd	10.04	7.736	4.51	
Ni	75.07	9.268	1.53	
P	1.49	0.176	8.13	
K	3.38	-0.263	-50.60	
Sm	5.22	-0.067	-135.85	
Se	3.23	2.921	2.60	
Si	4.33	0.645	4.64	
Ag	16.78	0.059	8.32	
Na	6.25	0.577	9.74	
Sr	3.96	0.008	11.46	
S	0.92	0.207	6.34	
Ta	21.42	7.325	0.93	
Tl	4.59	0.384	38.16	
Th	1.14	0.352	21.51	
Sn	23.32	9.354	1.21	
Ti	83.30	9.226	1.68	
W	2.31	0.739	3.69	
U	5.66	5.010	11.19	
V	4.42	0.000		
Zn	4.55	0.070	2.50	
Zr	32.26	9.328	1.63	

ICP Data Report - Acid Blank - (File 14)

Sample name : HN03
Programme : SST 19-Apr-90 09:48:24

NAME	MV	INT	CONCEN	RSD
Al	1.96	-0.169	-16.21	
Sb	0.37	-0.044	-66.67	
As	1.07	-0.029	-17.39	
Ba	3.86	-0.015	-9.37	
Be	0.69	-0.000	-43.59	
Bi	3.79	-0.139	-34.05	
B	4.67	0.001	332.54	
Cd	2.26	-0.007	-9.03	
Ca	0.47	-0.001	-13.58	
Ce	5.23	-0.467	-12.83	
Cr	1.29	(-0.060	-7.45	
Co	0.26	-0.020	-56.25	
Cu	2.88	-0.027	-9.05	
Dy	4.04	-0.009	-10.82	
Fe	1.61	-0.010	-3.63	
La	0.35	-0.030	-32.83	
Pb	0.27	0.071	45.03	
Li	4.08	0.001	551.09	
Mg	0.45	-0.000	-29.04	
Mn	0.75	-0.002	-35.38	
Hg	4.19	(-0.029	-10.54	
Mo	1.63	-0.012	-5.72	
Nd	5.42	(-0.847	-9.40	
Ni	3.33	-0.019	-24.70	
P	1.29	0.012	168.99	
K	3.29	-0.696	-9.86	
Sm	5.02	-0.546	-12.21	
Se	1.71	-0.139	-19.31	
Si	3.26	-0.078	-8.60	
Ag	14.89	-0.029	-14.95	
Na	5.38	-0.237	-11.66	
Sr	3.64	-0.005	-12.98	
S	0.72	-0.038	-13.19	
Ta	3.62	-0.074	-10.21	
Tl	4.19	(-0.628	-10.05	
In	1.05	-0.334	-16.76	
Sn	1.31	-0.021	-39.90	
Ti	3.47	-0.018	-12.54	
W	1.31	-0.051	-13.88	
U	5.07	-3.387	-10.46	
V	4.21	-0.025	-0.48	
Zn	2.33	-0.003	-6.18	
Zr	4.61	-0.053	-9.39	

ICP Data Report - LMCS Check Standard 78C11J - (File 15)

Sample name : 78C11J
Sample code 1 : SST1
Sample code 2 : DIRECT
Programme : SST 19-Apr-90 09:52:37

NAME	MV	INT	CONCEN	RSD
Al	2.00	-0.068	-15.38	
Si	1.09	10.591	1.18	
As	1.16	0.044	18.97	
Da	146.91	10.416	0.94	
Be	0.71	0.000	123.72	
Bi	3.84	-0.088	-28.18	
B	137.29	10.173	0.55	
Cd	162.34	10.012	0.92	
Ca	209.66	10.689	0.86	
Ce	10.14	9.175	1.22	
Cr	33.25	9.551	1.09	
Co	3.87	9.727	0.57	
Cu	51.35	10.517	0.88	
Eu	4.54	0.014	7.31	
Fe	64.73	10.346	0.71	
La	0.37	0.036	30.93	
Pb	0.27	0.078	0.00	
Li	91.73	10.608	0.70	
Mg	219.35	10.479	0.97	
Mn	138.86	10.281	0.91	
Hg	4.09	(-0.035	-11.09	
Mo	1.73	0.004	36.37	
Nd	10.76	9.076	3.51	
Ni	81.91	10.154	0.63	
P	1.34	0.051	34.41	
K	8.51	24.914	1.12	
Sm	4.93	(-0.275	-4.39	
Se	3.42	3.316	2.26	
Si	3.37	-0.067	-9.81	
Ag	14.68	(-0.039	-6.98	
Na	33.43	25.503	0.87	
Sr	261.95	10.580	0.96	
S	0.93	0.217	4.65	
Ia	3.65	-0.062	-5.75	
Tl	4.31	-0.328	-16.88	
Th	1.07	-0.189	-23.69	
Sn	120.18	50.427	0.94	
Ti	3.43	(-0.023	-5.57	
W	1.55	0.136	8.71	
U	5.30	-0.080	-351.61	
V	4.20	-0.026	-17.47	
Zn	311.25	10.091	0.84	
Zr	4.60	-0.057	-6.57	

ICP Data Report - LMCS Check Standard 82B38F - (File 16)

Sample name : 82B38F
 Sample code 1 : SST2
 Sample code 2 : DIRECT
 Programme : SST 19-Apr-90 09:57:20

NAME	MV	INT	CONCEN	RSD
Al		3.63	4.198	1.58
Sb		0.41	0.506	1.68
As		2.96	1.528	0.96
Ba		4.20	0.010	17.94
Be		0.73	0.001	34.69
Bi		57.66	54.288	0.05
B		5.47	0.063	4.91
Cd		2.42	0.003	40.50
Ca		0.73	0.012	0.64
Ce		5.63	0.314	13.05
Cr		1.63	0.044	11.62
Co		0.27	0.024	9.12
Cu		4.03	0.224	1.56
Eu		220.96	9.892	0.09
Fe		1.97	0.048	5.86
La		12.55	47.153	0.49
Pb		2.77	53.426	0.79
Li		4.28	0.025	17.91
Mg		0.59	0.006	0.89
Mn		0.91	0.010	2.66
Hg		4.89	0.017	14.65
Mo		1.79	0.014	15.81
Nd		6.00	0.235	35.15
Ni		3.65	0.022	14.24
R		1.62	0.286	5.77
K		3.33	-0.487	-21.53
Sm		9.43	9.936	0.75
Se		1.88	0.226	5.77
Si		4.16	0.531	3.11
Ag		246.50	10.797	0.49
Na		5.53	-0.091	-31.98
Sr		3.89	0.005	13.79
S		0.86	0.134	10.36
Ta		4.16	0.147	3.21
Tl		6.65	5.646	1.78
Th		7.85	53.294	0.50
Sn		1.42	0.070	6.60
Ti		4.05	0.049	6.51
W		1.39	0.009	92.71
U		9.10	53.477	1.11
V		6.20	0.220	3.16
Zn		2.64	0.007	7.86
Zr		5.07	0.105	8.25

ICP Data Report - LMCS Check Standard 77C11I - (File 17)

Sample name : 77C11I
Sample code 1 : SST3
Sample code 2 : DIRECT
Programme : SST 19-Apr-90 10:01:41

NAME	MV	INT	CONCEN	RSD
Al	21.27	50.184	0.81	
Sb	0.47	1.322	7.83	
As	71.23	57.765	0.66	
Ba	4.34	0.020	13.00	
Be	238.03	9.838	0.55	
Bi	4.97	1.052	3.17	
B	5.56	0.070	0.75	
Cd	2.62	0.015	10.58	
Ca	0.74	0.013	0.23	
Ce	5.58	0.321	45.03	
Cr	1.50	0.004	99.35	
Co	0.30	0.153	3.73	
Cu	3.30	0.064	8.80	
Eu	4.33	0.004	37.48	
Fe	1.97	0.049	13.03	
La	0.37	0.030	45.81	
Pb	0.29	0.454	9.76	
Li	4.23	0.019	2.23	
Mg	0.52	0.003	4.16	
Mn	1.04	0.019	4.69	
Hg	395.71	25.568	0.10	
Mo	286.55	48.572	0.80	
Nd	5.81	-0.108	-91.66	
Ni	7.35	0.501	0.75	
P	70.59	57.863	1.02	
K	3.45	0.082	129.01	
Sm	5.39	0.318	32.27	
Se	27.91	52.507	0.60	
Si	70.49	45.198	0.49	
Ag	22.48	0.326	0.77	
Na	5.87	0.220	21.74	
Sr	3.92	0.006	18.45	
S	42.86	53.038	0.68	
Ia	119.75	48.190	0.68	
Tl	25.27	52.995	1.13	
Th	1.24	1.117	6.33	
Sn	1.74	0.205	5.94	
Ti	439.15	50.431	0.96	
W	27.28	20.931	0.68	
U	6.29	13.916	4.64	
V	84.95	9.932	0.54	
Zn	3.56	0.037	0.71	
Zr	152.09	49.976	0.95	

ICP Data Report (File 37)

NAME	MV	INT	CONCEN	RSD
Al	1.98	-0.121	-61.06	
Sb	0.38	0.039	229.13	
As	1.08	-0.018	-58.08	
Br	3.91	-0.011	-34.26	
Be	0.70	-0.000	-93.21	
Bi	3.79	-0.142	-70.02	
R	4.70	0.004	89.35	
Cd	2.26	-0.007	-25.36	
Ca	0.48	-0.001	-36.56	
Ce	5.29	-0.355	-40.04	
Cr	1.31	(-0.054	-11.57	
Co	0.26	-0.005	-129.91	
Cu	2.91	-0.020	-40.44	
Eu	4.09	-0.007	-39.54	
Fe	1.63	-0.007	-59.99	
La	0.36	-0.006	-34.64	
Pb	0.27	0.156	20.83	
Li	3.93	-0.017	-37.97	
Mg	0.45	-0.000	-40.91	
Mn	0.76	-0.001	-69.74	
Hg	4.90	0.018	24.67	
Mo	1.66	-0.007	-58.20	
Nd	5.46	(-0.764	-20.76	
Ni	3.37	-0.014	-59.19	
P	1.29	0.011	114.84	
K	3.31	-0.613	-27.52	
Sm	5.09	-0.398	-39.00	
Se	1.73	-0.089	-53.58	
Si	3.27	-0.071	-40.22	
Ag	15.01	-0.023	-43.80	
Na	5.42	-0.193	-36.50	
Sr	3.67	-0.004	-40.53	
S	0.74	-0.016	-37.95	
Ta	3.68	-0.049	-58.11	
Tl	4.25	-0.478	-32.09	
Th	1.07	-0.242	-38.44	
Sn	1.23	-0.012	-40.91	
Ti	3.50	-0.014	-38.20	
W	1.33	-0.035	-63.19	
U	5.12	-2.724	-34.93	
V	4.24	-0.021	-35.74	
Zn	2.34	-0.003	-21.27	
Zr	4.65	-0.039	-38.62	

ICP Data Report (File 38)

Sample name : 78C11J
 Sample code 1 : SST1
 Sample code 2 : DIRECT
 Programme : SST 19-Apr-90 12:39:42

NAME	MV	INT	CONCEN	RSD
Al	1.99	-0.092	-25.68	
Sb	1.08	10.350	0.43	
As	1.15	0.040	22.48	
Ba	144.51	10.240	0.57	
Be	0.70	-0.000	-91.65	
Bi	3.84	-0.089	-16.62	
B	133.91	9.914	0.63	
Cd	159.73	9.849	0.88	
Ca	205.51	10.477	0.59	
Ce	10.08	9.042	0.85	
Cr	32.49	9.324	0.98	
Co	2.72	9.188	1.00	
Cu	50.45	10.321	0.57	
Eu	4.53	0.013	7.90	
Fe	63.64	10.168	0.68	
La	0.37	0.037	21.53	
Pb	0.27	0.142	0.00	
Li	89.23	10.305	0.47	
Hg	214.90	10.266	0.54	
Mn	136.19	10.082	0.76	
Hg	4.29	(-0.022	-6.90	
Mo	1.72	0.002	13.89	
Nd	10.48	8.558	3.38	
Ni	80.37	9.955	0.82	
P	1.35	0.063	13.62	
K	8.41	24.389	0.77	
Sm	4.92	(-0.783	-5.86	
Se	3.36	3.198	2.36	
Si	3.25	-0.080	-9.44	
Ag	14.67	(-0.039	-11.17	
Na	32.96	25.072	0.50	
Sr	257.56	10.400	0.50	
S	0.92	0.206	1.54	
Ta	3.64	-0.065	-7.96	
Tl	4.30	-0.342	-4.10	
In	1.07	-0.184	-8.92	
Sn	118.45	49.692	0.70	
Ti	3.42	(-0.024	-5.64	
W	1.57	0.151	6.32	
U	5.28	-0.400	-80.66	
V	4.18	(-0.029	-9.68	
Zn	306.15	9.924	0.71	
Zr	4.59	-0.059	-11.49	

ICP Data Report (File 39)

Sample name : 82B38F 82B38F
 Sample code 1 : SST2
 Sample code 2 : DIRECT
 Programme : SST 19-Apr-90 12:43:44

NAME	MV	INT	CONCEN	RSD
Al	3.58	4.046	1.01	
Si	0.41	0.457	8.53	
As	2.91	1.488	1.44	
Ba	4.13	0.005	75.45	
Be	0.71	0.000	45.07	
Bi	56.84	53.462	0.68	
B	5.35	0.054	3.87	
Cd	2.37	-0.001	-351.23	
Ca	0.72	0.012	0.88	
Ce	5.53	0.121	117.90	
Cr	1.60	0.035	12.26	
Co	0.26	0.004	152.75	
Cu	3.98	0.212	2.93	
Eu	218.88	9.797	0.88	
Fe	1.93	0.042	9.34	
La	12.47	046.826	0.99	
Pb	2.74	52.723	0.75	
Li	4.28	0.025	15.72	
Mg	0.58	0.006	2.16	
Mn	0.89	0.009	7.88	
Hg	4.60	-0.002	-153.15	
Mo	1.76	0.009	39.66	
Nd	5.93	0.101	69.28	
Ni	3.55	0.010	56.20	
P	1.57	0.241	6.10	
K	3.27	-0.790	-23.63	
Sm	9.29	9.612	1.24	
Se	1.87	0.203	24.01	
Si	4.08	0.477	5.05	
Ag	243.27	10.646	0.69	
Na	5.43	-0.183	-37.88	
Sr	3.83	0.003	63.96	
S	0.84	0.106	17.84	
Ta	4.06	0.106	16.02	
Tl	6.60	5.505	2.11	
Ih	7.77	52.658	0.91	
Sn	1.40	0.064	14.15	
Ti	3.99	0.042	10.67	
W	1.37	-0.002	-1124.2	
U	8.96	51.468	1.34	
V	6.17	0.217	1.42	
Zn	2.58	0.005	13.15	
Zr	5.01	0.082	19.98	

ICP Data Report (File 40)

Sample name : 77C111
 Sample code 1 : SST3
 Sample code 2 : DIRECT
 Programme : SST 19-Apr-90 12:47:53

NAME	MV	INT	CONCEN	RSD
Al	21.20	49.990	1.32	
Sb	0.46	1.258	13.58	
As	70.55	57.205	1.86	
Ba	4.24	0.013	22.42	
Be	234.64	9.697	1.29	
Bi	4.85	0.934	4.18	
B	5.44	0.061	5.26	
Cd	2.55	0.011	9.93	
Ca	0.74	0.013	2.24	
Ce	5.45	-0.046	-247.41	
Cr	1.48	-0.003	-150.11	
Co	0.29	0.117	10.26	
Cu	3.23	0.048	11.84	
Eu	4.23	-0.000	-533.50	
Fe	1.92	0.041	9.00	
La	0.36	0.013	86.60	
Pb	0.28	0.327	13.58	
Li	4.15	0.009	8.68	
Mg	0.51	0.003	8.30	
Mn	1.01	0.018	8.26	
Hg	390.16	25.206	1.86	
Mo	283.36	48.028	1.95	
Nd	5.65	-0.407	-3.82	
Ni	7.29	0.493	1.22	
P	70.10)57.453	2.76	
K	3.37	-0.322	-40.13	
Sm	5.26	0.013	949.24	
Se	27.59	51.855	2.39	
Si	69.82	44.741	1.97	
Ag	22.33	0.319	0.46	
Na	5.71	0.082	74.29	
Sr	3.84	0.003	46.78	
S	43.16)53.413	2.69	
Ta	118.08	47.496	2.28	
Tl	25.02	52.358	0.82	
Th	1.21	0.928	8.17	
Sn	1.71	0.192	3.42	
Ti	437.99	50.297	0.94	
W	27.39	20.618	1.97	
U	6.17	12.086	3.49	
V	84.93	9.930	1.63	
Zn	3.49	0.035	3.27	
Zr	151.66	49.832	1.06	

ICP Data Report (File 41)

Sample name : F140
 Sample code 1 : SAMPLE
 Sample code 2 : 100-10
 Sample code 3 : 89047
 Programme : SST 19-Apr-90 12:52:15

NAME	MV	INT	CONCEN	DILCOR	RSI
Al	7.58	14.481	1462.5	1.76	
Sb	0.39	0.226	22.833	13.58	
As	1.15	0.038	3.855	15.16	
Ba	4.17	0.008	0.800	22.99	
Be	0.74	0.001	0.151	27.36	
Bi	4.35	0.428	43.234	7.34	
B	4.89	0.018	1.846	10.16	
Cd	2.39	0.001	0.089	155.23	
Ca	1.18	0.035	3.568	1.10	
Co	5.57	0.192	19.436	30.72	
Cr	1.50	0.005	0.456	56.20	
Co	0.26	0.004	0.377	152.75	
Cu	3.17	0.035	3.537	10.57	
Eu	4.31	0.003	0.350	33.21	
Fe	6.04	0.717	72.384	1.28	
La	0.37	0.030	2.995	41.93	
Pb	0.28	0.256	25.815	4.81	
Li	4.18	0.013	1.320	16.38	
Mg	3.45	0.144	14.504	1.19	
Mn	6.95	0.459	46.392	0.88	
Hg	4.34	(-0.019	(-1.939	-16.24	
Mo	1.80	0.017	1.688	23.98	
Nd	5.76	-0.200	-20.25	-56.70	
Ni	3.63	0.020	2.027	11.17	
P	1.64	0.306	30.886	3.87	
K	3.45	0.096	9.741	51.94	
Sm	5.36	0.246	24.846	34.38	
Se	1.85	0.149	15.081	20.37	
Si	4.25	0.593	59.917	8.88	
Ag	15.86	0.016	1.645	27.72	
Na	12.10	5.935	599.42	0.81	
Sr	5.24	0.060	6.099	0.75	
S	0.80	0.056	5.640	18.23	
Ta	3.91	0.047	4.730	30.22	
Tl	4.63	0.487	49.145	7.84	
Th	1.12	0.210	21.241	17.72	
Sn	1.31	0.022	2.227	15.66	
Ii	3.73	0.012	1.224	22.94	
W	1.43	0.045	4.590	19.21	
U	5.48	2.456	248.03	17.29	
V	4.60	0.022	2.255	9.90	
Zn	2.89	0.016	1.575	2.64	
Zr	4.85	0.030	2.992	23.64	

Dilution factor : 101.000

ICP Data Report (File 42)

Sample name : F140
 Sample code 1 : SAMPLE
 Sample code 2 : 500-10
 Sample code 3 : 89047
 Programme : SST 19-Apr-90 12:56:37

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	27.78	167.149	1410.1	1.32	
Si	0.39	0.275	5.779	17.22	
As	1.17	0.055	1.147	16.54	
Na	4.26	0.014	0.304	31.11	
Be	0.72	0.001	0.015	67.36	
Bi	5.53	1.615	33.913	5.18	
B	4.79	0.010	0.220	44.69	
Cd	2.37	-0.000	-0.010	-397.16	
Ca	3.33	0.145	3.049	0.58	
Ce	5.42	-0.093	-1.952	-160.63	
Cr	1.96	0.141	2.968	3.06	
Co	0.27	0.020	0.418	39.03	
Cu	3.50	0.108	2.270	8.67	
Eu	4.20	-0.002	-0.041	-144.69	
Fe	21.71	3.288	69.043	0.26	
La	0.37	0.019	0.406	72.11	
Pb	0.28	0.334	7.007	11.06	
Li	4.05	-0.003	-0.071	-191.30	
Hg	9.89	0.452	9.488	0.06	
Mn	29.32	2.125	44.627	0.03	
Hg	4.18	(-0.029	(-0.615	-14.56	
Mo	1.81	0.018	0.371	23.65	
Nd	5.61	-0.494	-10.38	-26.46	
Ni	3.90	0.055	1.145	16.74	
P	2.40	0.934	19.622	2.22	
K	3.37	-0.304	-6.385	-78.34	
Sm	5.21	-0.106	-2.233	-167.34	
Se	1.92	0.308	6.468	23.55	
Si	6.13	1.854	38.939	5.20	
Ag	15.62	0.005	0.103	253.03	
Na	35.41	27.319	573.69	0.28	
Sr	10.39	0.271	5.701	0.20	
S	0.85	0.115	2.425	11.07	
Ta	3.79	-0.004	-0.093	-481.30	
Tl	4.58	0.376	7.886	29.29	
Th	1.09	-0.016	-0.331	-675.30	
Sn	1.35	0.038	0.807	20.82	
Ti	3.85	0.026	0.540	19.90	
W	1.47	0.071	1.498	19.42	
U	5.70	5.584	117.27	18.16	
V	4.59	0.021	0.439	33.26	
Zn	3.54	0.037	0.772	2.54	
Zr	4.82	0.019	0.406	99.59	

Dilution factor : 21.0000

ICP Data Report (File 43)

Sample name : F141
 Sample code 1 : DUPSAM
 Sample code 2 : 100-10
 Sample code 3 : 89047
 Programme : SST 19-Apr-90 13:00:28

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	6.76	12.356	1247.9	1.51	
Sb	0.37	-0.034	-3.475	-24.74	
As	1.07	-0.029	-2.967	-27.23	
Ba	3.83	(-0.017	(-1.718	-8.43	
Be	0.68	-0.001	-0.099	-28.13	
Bi	3.95	0.024	2.415	202.83	
B	4.49	-0.012	-1.198	-36.07	
Cd	2.21	(-0.011	(-1.070	-6.31	
Ca	1.09	0.031	3.097	0.44	
Ce	5.12	(-0.681	(-68.82	-7.87	
Cr	1.40	(-0.027	(-2.683	-21.61	
Co	0.25	-0.044	-4.401	-4.95	
Cu	2.91	-0.021	-2.109	-13.23	
Eu	3.96	(-0.013	(-1.297	-6.10	
Fe	4.86	0.523	52.813	0.76	
La	0.35	-0.039	-3.906	-20.00	
Pb	0.27	0.021	2.151	152.75	
Li	3.84	(-0.029	(-2.893	-7.70	
Mg	6.73	0.300	30.333	0.33	
Mn	5.52	0.353	35.637	0.64	
Hg	3.94	(-0.045	(-4.550	-9.63	
Mo	1.63	-0.012	-1.229	-26.64	
Nd	5.30	(-1.056	(-106.7	-8.41	
Ni	3.33	-0.019	-1.918	-4.64	
P	1.47	0.163	16.413	15.19	
K	3.22	(-1.054	(-106.5	-2.90	
Sm	4.92	(-0.800	(-80.79	-7.31	
Se	1.71	-0.128	-12.92	-14.85	
Si	3.79	0.280	28.269	9.23	
Ag	14.54	(-0.046	(-4.620	-7.17	
Na	10.30	4.292	433.46	0.51	
Sr	4.73	0.039	3.987	1.46	
S	0.75	-0.000	-0.042	-1307.9	
Ta	3.56	(-0.099	(-9.949	-15.19	
Tl	4.17	(-0.674	(-68.07	-13.53	
Th	1.04	(-0.486	(-49.12	-7.43	
Sn	1.22	-0.014	-1.385	-37.41	
Ti	3.45	-0.020	-2.051	-11.83	
W	1.32	-0.046	-4.617	-18.05	
U	5.03	(-3.989	(-402.9	-7.81	
V	4.19	(-0.028	(-2.807	-9.38	
Zn	2.96	0.018	1.789	3.73	
Zr	4.55	-0.072	-7.229	-9.41	

Dilution factor : 101.000

ICP Data Report (File 44)

Sample name : F141
 Sample code 1 : DUPSAM
 Sample code 2 : 500-10
 Sample code 3 : 89047
 Programme : SST 19-Apr-90 13:04:51

NAME	MV	INT	CONCEN	DILCOR	RSD
Al	24.53	158.685	1232.4	0.98	
Sb	0.38	0.020	0.413	173.21	
As	1.10	-0.004	-0.092	-195.75	
Ba	3.99	-0.005	-0.109	-51.91	
Be	0.69	-0.001	-0.015	-51.36	
Bi	4.94	1.027	21.564	3.99	
Br	4.61	-0.003	-0.065	-160.73	
Cd	2.23	(-0.009	(-0.199	-7.13	
Ca	2.86	0.121	2.539	0.78	
Ce	5.12	(-0.700	(-14.69	-14.05	
Cr	1.79	0.091	1.901	9.55	
Co	0.25	-0.032	-0.680	-35.25	
Cu	3.23	0.049	1.019	12.35	
Eu	3.96	(-0.013	(-0.268	-15.23	
Fe	16.58	2.446	51.376	1.50	
La	0.35	-0.040	-0.839	-20.15	
Pb	0.27	0.078	1.640	27.27	
Li	3.82	(-0.031	(-0.652	-12.30	
Hg	11.64	0.536	11.246	0.84	
Mn	23.15	1.666	34.980	0.77	
Hg	4.05	(-0.038	(-0.797	-9.97	
Ho	1.70	-0.001	-0.021	-261.57	
Nd	5.28	(-1.100	(-23.11	-10.43	
Ni	3.61	0.017	0.363	51.36	
P	2.02	0.617	12.961	9.76	
K	3.22	(-1.022	(-21.46	-11.01	
Sm	4.92	(-0.793	(-16.65	-13.67	
Se	1.81	0.070	1.476	22.68	
Si	5.77	1.616	33.928	1.55	
Ag	14.68	(-0.039	(-0.818	-16.56	
Na	28.84	21.296	447.21	0.93	
Sr	8.99	0.214	4.491	1.08	
S	0.81	0.076	1.596	22.56	
Ta	3.55	(-0.103	(-2.156	-20.25	
Tl	4.31	-0.308	-6.462	-38.64	
Th	1.04	(-0.444	(-9.330	-12.47	
Sn	1.27	0.008	0.178	20.21	
Ti	3.63	0.001	0.019	363.64	
W	1.39	0.011	0.239	98.75	
U	5.33	0.240	5.039	266.35	
V	4.35	-0.008	-0.165	-60.59	
Zn	3.54	0.037	0.767	3.20	
Zr	4.64	-0.042	-0.890	-25.87	

Dilution factor : 21.0000

ICP Data Report (File 53)

Sample name	:	HN03		
Programme	:	SST		
		19-Apr-90 13:48:24		
NAME	MV	INT	CONCEN	RSD
Al	1.94	-0.217	-13.27	
Se	0.37	-0.108	-20.83	
As	1.05	-0.040	-34.56	
Ba	3.84	(-0.016	-12.45	
Be	0.68	-0.001	-18.65	
Bi	3.77	-0.157	-19.92	
H	4.43	-0.017	-11.21	
Cd	2.21	(-0.010	-7.71	
Ca	0.48	-0.001	-93.91	
Ce	5.20	-0.531	-13.75	
Cr	1.27	(-0.065	-10.08	
Co	0.26	-0.017	-24.74	
Cu	2.87	-0.030	-13.27	
Eu	4.02	(-0.010	-11.03	
Fe	1.59	-0.013	-8.62	
La	0.25	-0.037	-26.03	
Pb	0.27	-0.007	-299.98	
Li	3.87	(-0.025	-10.93	
Mg	0.44	-0.001	-13.95	
Mn	0.75	-0.002	-6.52	
Hg	4.30	(-0.022	-6.99	
Mo	1.62	-0.014	-13.01	
Nd	5.34	(-0.989	-5.38	
Ni	3.30	(-0.023	-18.26	
P	1.29	0.011	60.93	
K	3.26	(-0.866	-13.12	
Sm	5.00	-0.613	-13.78	
Se	1.70	-0.143	-8.45	
Si	3.23	-0.096	-8.74	
Ag	14.75	-0.036	-13.45	
Na	5.33	(-0.269	-13.62	
Sr	3.62	-0.006	-15.42	
S	0.72	-0.042	-17.50	
Ia	3.63	-0.071	-15.41	
Tl	4.23	-0.522	-18.94	
In	1.05	-0.336	-15.37	
Sn	1.21	-0.021	-21.35	
Ti	3.44	(-0.031	-12.53	
W	1.30	(-0.058	-24.90	
U	5.02	(-4.051	-11.71	
V	4.24	-0.022	-22.21	
Zn	2.29	(-0.004	-22.92	
Zr	4.59	-0.058	-14.76	

ICP Data Report (File 54)

Sample name	:	78C11J		
Sample code 1	:	SST1		
Sample code 3	:	DIRECT		
Programme	:	SST		
		19-Apr-90 13:52:09		
NAME	MV	INT	CONCEN	RSD
Al	2.07	0.114	10.33	
Sb	1.09	10.502	1.18	
As	1.21	0.086	8.59	
Ba	140.61	9.956	0.63	
Be	0.73	0.001	15.55	
Bi	4.00	0.069	15.57	
B	130.90	9.683	0.64	
Cd	158.55	9.775	0.59	
Ca	199.16	10.153	0.58	
Ce	10.17	9.318	1.07	
Cr	32.06	9.192	0.39	
Co	2.44	0.123	1.71	
Cu	49.49	10.111	0.60	
Eu	4.70	0.021	3.05	
Fe	62.38	9.961	0.77	
La	0.38	0.068	3.27	
Pb	0.27	0.177	18.33	
Li	86.49	9.974	0.53	
Hg	210.33	10.047	0.71	
Mn	133.64	9.892	0.51	
Hg	4.27	(-0.024	-7.96	
Mo	1.77	0.012	10.50	
Nd	10.62	8.811	1.65	
Ni	79.65	9.862	0.72	
P	1.40	0.101	11.89	
K	8.46	24.672	0.83	
Sm	5.15	-0.244	-10.77	
Se	3.40	3.268	1.25	
Si	3.39	0.010	53.25	
Ag	15.34	-0.008	-8.95	
Na	32.63	24.771	0.73	
Sr	250.52	10.111	0.70	
S	0.94	0.229	4.96	
Ta	3.81	0.003	326.86	
Tl	4.53	0.250	23.46	
Th	1.12	0.179	10.19	
Sn	118.16	49.570	0.80	
Ti	3.56	-0.008	-2.20	
W	1.62	0.196	8.95	
U	5.50	2.677	4.61	
V	4.40	-0.002	-145.01	
Zn	304.68	9.876	0.52	
Zr	4.74	-0.007	-13.01	

ICP Data Report (File 55)

Sample name : 82R38F
 Sample code 1 : SST2
 Sample code 2 : DIRECT
 Programme : SST 19-Apr-90 13:55:57

NAME	MV	INT	CONCEN	RSD
Al	3.67	4.304	0.97	
Sb	0.42	0.659	1.29	
As	2.97	1.541	1.05	
Ba	4.27	0.015	11.38	
Be	0.73	0.001	3.45	
Bi	57.99	54.625	0.79	
B	5.35	0.053	7.92	
Cd	2.43	0.003	21.32	
Ca	0.74	0.013	1.01	
Ce	5.71	0.475	14.37	
Cr	1.64	0.046	9.32	
Co	0.27	0.015	38.19	
Cu	4.07	0.231	0.73	
Eu	218.24	9.768	1.03	
Fe	1.99	0.053	1.64	
La	12.52	147.013	0.90	
Pb	2.79	53.774	0.84	
Li	4.25	0.021	8.55	
Hg	0.59	0.006	1.28	
Mn	0.91	0.010	1.12	
Hg	4.92	0.019	19.05	
Mo	1.82	0.019	2.74	
Nd	6.03	0.290	42.95	
Ni	3.66	0.024	15.89	
P	1.62	0.289	6.22	
K	3.37	-0.325	-35.49	
Sm	9.46	10.019	0.67	
Se	1.90	0.256	7.88	
Si	4.18	0.545	1.31	
Ag	246.22	10.784	0.85	
Na	5.62	-0.007	-271.53	
Sr	3.94	0.007	11.47	
S	0.85	0.125	4.55	
Ta	4.19	0.163	9.57	
Tl	6.74	5.853	0.54	
Th	7.85	53.265	0.92	
Sn	1.44	0.077	4.00	
Ti	4.11	0.057	3.53	
W	1.41	0.024	7.70	
U	9.14	54.069	0.91	
V	6.28	0.230	1.16	
Zn	2.65	0.007	2.91	
Zr	5.13	0.124	5.71	

ICP Data Report (File 56)

Sample name : 77C11I
Sample code 1 : SST3
Sample code 2 : DIRECT
Programme : SST

19-Apr-90 13:59:49

NAME	MV	INT	CONCEN	RSID
Al	21.35	50.388	1.01	
Sb	0.46	1.268	7.07	
As	70.50	57.163	1.04	
Ba	4.22	0.011	25.80	
Be	237.25	9.805	0.17	
Bi	4.80	0.877	6.70	
B	5.27	0.047	8.63	
Cd	2.54	0.010	8.92	
Ca	0.74	0.013	0.61	
Ce	5.41	-0.117	-98.48	
Cr	1.46	-0.008	-50.01	
Co	0.28	0.072	2.99	
Cu	3.22	0.046	13.81	
Eu	4.20	-0.002	-108.01	
Fe	1.93	0.043	12.06	
La	0.36	0.012	88.19	
Pb	0.28	0.305	4.03	
Li	4.10	0.003	236.49	
Hg	0.51	0.003	5.22	
Mn	1.02	0.018	3.71	
Hg	388.50	25.092	1.04	
Mo	285.93	48.465	0.99	
Nd	5.62	-0.476	-20.54	
Ni	7.25	0.489	0.55	
P	60.72	49.620	2.58	
K	3.36	-0.378	-39.41	
Sm	5.23	-0.060	-208.36	
Se	27.86	52.398	0.75	
Si	70.34	45.093	1.22	
Ag	32.32	0.313	1.57	
Na	5.69	0.056	89.49	
Sr	3.81	0.002	66.66	
S	41.10	50.812	1.90	
Ta	119.73	48.183	0.79	
Tl	25.41	53.347	2.93	
Th	1.20	0.836	0.56	
Sn	1.69	0.184	4.81	
Ti	439.19	50.435	1.33	
W	27.47	20.684	1.21	
U	6.07	10.811	6.66	
V	86.51	10.125	0.56	
Zn	3.49	0.035	1.48	
Zr	152.07	49.971	1.17	

**APPENDIX A
ANALYTICAL ANALYSIS CARDS**

Physical Properties

Serial No.	Sample Point	Date	Time Issued	Priority
F 125.-5002	SEGMENT-B	11-17-89	10:10	24
Determination	Method/Standard	Result Units	Charge Code	Reruns
PRT-SIZE	LI-000-200	NONE	WB75L	0
Sample Size			Customer ID	
?			89-047	
Remarks, Calculations, Results: PARTICLE SIZE DISTRIBUTION Gross 25.01 Tare 25.09 1.92 gm				
Results: see attached sheet(6)				
Analyst-1 <i>KJP FHS</i> 12-5-89	Analyst-2	Analyst-3	Analyst-4	Analyst-5
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr. <i>CJN</i>		
SI-6800-061 (R-10-83)				

Serial No.	Sample Point	Date	Time Issued	Priority
F 125.-5003	SEGMENT-B	11-17-89	10:10	16
Determination	Method/Standard	Result Units	Charge Code	Reruns
HOMOGZT	LI-000-200	NONE	WB75L	0
Sample Size			Customer ID	
?			89-047	
Remarks, Calculations, Results: Homogenization complete 12-28-89 fact# 129				
Analyst-1 <i>R2L</i> KJP FHS	Analyst-2 <i>60297</i> 10:30 108090	Analyst-3	Analyst-4	Analyst-5
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr.		
SI-6800-061 (R-10-83)				

Serial No.	Sample Point	Date	Time Issued	Priority
F 125.-5000	SEGMENT-B	11-17-89	10:10	18
Determination	Method/Standard	Result Units	Charge Code	Reruns
APPR/OTR	LI-000-200	NONE	WB75L	0
Sample Size			Customer ID	
?	104C N 313.3	89-047		
Remarks, Calculations, Results: A. JAR ID# <i>65</i> B. JAR TARE WT. <i>22.195</i> C. JAR TOTAL WT. <i>497.50</i> D. C-E = <i>275.55</i> E. EST. VOL./LENGTH <i>15"</i> F. VISUAL REMARKS				
<i>Some liquid</i> <i>during extraction</i> <i>some loss through</i> <i>value</i> <i>DUPLICATE SAMPLE</i> <i>Gross 27.58</i> <i>Tare 23.01</i> <i>4.57 gm</i>				
<i>Bottom 12"-dark - soggy-block firm sludge</i> <i>Top 3"-white - granular-breakable - weight 1/3 of total</i> <i>Send to PNL</i>				
Analyst-1 <i>R2L</i> KJP FHS	Analyst-2 <i>60297</i> 10:30 105286	Analyst-3	Analyst-4	Analyst-5
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr. <i>CJN</i>	JMS	
SI-6800-061 (R-10-83)				

Serial No.	Sample Point	Date	Time Issued	Priority
F 125.-5001	SEGMENT-B	11-17-89	10:10	18
Determination	Method/Standard	Result Units	Charge Code	Reruns
VOA SAMP	LI-000-200	NONE	WB75L	0
Sample Size			Customer ID	
?		89-047		
Remarks, Calculations, Results: DUPLICATE SAMPLE Gross 27.58 Tare 23.01 4.57 gm				
Analyst-1 <i>R2L</i> KJP FHS	Analyst-2 <i>60297</i> 10:30 105286	Analyst-3	Analyst-4	Analyst-5
Hrs	Hrs	Hrs	Hrs	Hrs
Date	Time Completed	Lab Unit Mgr.		JMS
SI-6800-061 (R-10-83)				

Physical Properties

~~~ 20 ml of ligain in the liner~~

~~#55~~  
~~Price 231.95~~

~~Sp. weight  
of white material  
# 81~~

~~Tare 21.85~~  
~~Net 22.46~~  
~~2.39 g~~

~~Drain 6½ Liguid  
Bottle # 82~~

~~~ 22 ml of  
liquid~~

~~F 125.-5000~~

~~Tare 38.28~~
~~Net 22.50~~
~~16.5 g~~

pH Analysis of Solid Sample

F944

| | | | | |
|--|-------------------------------|-----------------------------|----------------------------|------------------------------|
| Serial No.
F 292.-5515 | Sample Point
SEGMENT-E | Date
11-21-89 | Time Issued
8:30 | Priority
19 |
| Determination
pH | Method/Standard
LA-212-103 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089050 | | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
pH FOUND <u>10.05</u>
STD ID <u>LA-212-103</u>
SAMPLE TEMP <u>23.8</u> | | | | |
| $\frac{10.09}{10.0}$ 100.90% | | | | |
| Analyst - 1
<i>GC269</i> | Analyst - 2
<i>Mary</i> | Analyst - 3
<i>Tracy</i> | Analyst - 4
<i>John</i> | Analyst - 5
<i>Robert</i> |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-2-90 | Time Completed | Lab Unit Mgr
<i>CJG</i> | <i>OK</i> | |
| 54-0800-081 (R-10-82) | | | | |

| | | | | |
|--|-------------------------------|-----------------------------|----------------------------|------------------------------|
| Serial No.
F 100.-5515 | Sample Point
SEGMENT-1 | Date
11-15-89 | Time Issued
10:55 | Priority
19 |
| Determination
pH | Method/Standard
LA-212-103 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089045 | | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
pH FOUND <u>10.10</u>
STD ID <u>LA-212-103</u>
SAMPLE TEMP <u>23.6</u> | | | | |
| $\frac{10.10}{10.0}$ 101.00% | | | | |
| Analyst - 1
<i>GC269</i> | Analyst - 2
<i>Mary</i> | Analyst - 3
<i>Tracy</i> | Analyst - 4
<i>John</i> | Analyst - 5
<i>Robert</i> |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-2-90 | Time Completed | Lab Unit Mgr
<i>CJG</i> | <i>OK</i> | |
| 54-0800-081 (R-10-82) | | | | |

| | | | | |
|---|-------------------------------|-----------------------------|----------------------------|------------------------------|
| Serial No.
F 125.-5015 | Sample Point
SEGMENT-B | Date
11-17-89 | Time Issued
10:10 | Priority
19 |
| Determination
pH | Method/Standard
LA-212-103 | Result Units
NONE | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089047 | | | |
| Remarks, Calculations, Results:
pH <u>12.42</u>
SAMPLE TEMP <u>23.7</u> | | | | |
| $\frac{3.6614g}{3.661ml} = 1.000$ 12.42 10.46 grams | | | | |
| Analyst - 1
<i>GC269</i> | Analyst - 2
<i>Mary</i> | Analyst - 3
<i>Tracy</i> | Analyst - 4
<i>John</i> | Analyst - 5
<i>Robert</i> |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-2-90 | Time Completed | Lab Unit Mgr
<i>CJG</i> | <i>OK</i> | |
| 54-0800-081 (R-10-82) | | | | |

| | | | | |
|---|-------------------------------|-----------------------------|----------------------------|------------------------------|
| Serial No.
F 126.-5115 | Sample Point
SEGMENT-C | Date
11-17-89 | Time Issued
10:10 | Priority
19 |
| Determination
pH | Method/Standard
LA-212-103 | Result Units
NONE | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089047 | | | |
| Remarks, Calculations, Results:
pH <u>12.95</u>
SAMPLE TEMP <u>23.7</u> | | | | |
| Analyst - 1
<i>GC269</i> | Analyst - 2
<i>Mary</i> | Analyst - 3
<i>Tracy</i> | Analyst - 4
<i>John</i> | Analyst - 5
<i>Robert</i> |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-2-90 | Time Completed | Lab Unit Mgr
<i>CJG</i> | <i>OK</i> | |
| 54-0800-081 (R-10-82) | | | | |

pH Analysis of Solid Sample

| | | | | |
|---|-------------------------------|----------------------------|----------------------|----------------------------------|
| Serial No. :
F 121.-5315 | Sample Point
SEGMENT-22 | Date
11-15-89 | Time Issued
10:58 | Priority
1B |
| Determination
pH | Method/Standard
LA-212-103 | Result Units
NONE | Charge Code
WB75L | Permit
0 |
| Sample Size
? | | | | Customer ID
089045 |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
OH FOUND _____
STD AD _____
SAMPLE TEMP _____
Reagent Blank = 6.83 | | | | |
| Analyst - 1
<i>40269</i> | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5
<i>re Examine</i> |
| <i>Mary</i>
<i>Grazia</i> | Hrs | Hrs | Hrs | Hrs |
| Date
1-2-90 | Time Completed | Lab Unit Mgr
<i>EGL</i> | <i>OK</i> | |

S-8800-081 (R-10-83)

Percent Water Analysis

| | | | | |
|---|-------------------------------|----------------------------|----------------------|---------------------------------|
| Serial No.
F 126.-5110 | Sample Point
SEGMENT-C | Date
11-17-89 | Time Issued
10:10 | Priority
19 |
| Determination
% H ₂ O | Method/Standard
LA-564-101 | Result Units
% | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089047 | | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE

G. 22.5153
T. 21.6781
W1 22.2027
W2 22.2020

37.3% | | | | |
| Analyst - 1
<i>6858/24</i> | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
<i>#8 Eamott</i> |
| Date
1-3-90 | Time Completed
<i>CJ</i> | Lab Unit Mgr
<i>off</i> | | |
| S4-0800-061 (R-10-83) | | | | |

| | | | | |
|--|--------------------------------------|----------------------------|----------------------|---------------------------------|
| Serial No.
F 309.-5310 | Sample Point
SEGMENT-V | Date
11-21-89 | Time Issued
8:32 | Priority
18 |
| Determination
% H ₂ O | Method/Standard
LA-564-101 | Result Units
<i>X</i> | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089050 | | | |
| Remarks, Calculations, Results:
REAGENT BLANK
022.0121 G 21.4901
22.0121 T. 21.4901
22.0054 W1 21.4836
22.0051 W2 21.4836

<i>6.5 14 105 6.5 = 3 6.5</i> | | | | |
| Analyst - 1
<i>6858/24</i> | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
<i>#8 Eamott</i> |
| Date
1-3-90 | Time Completed
<i>CJ/M/Sidell</i> | Lab Unit Mgr
<i>off</i> | | |
| S4-0800-061 (R-10-83) | | | | |

| | | | | |
|--|--------------------------------|----------------------------|----------------------|---------------------------------|
| Serial No.
F 292.-5510 | Sample Point
SEGMENT-E | Date
11-21-89 | Time Issued
8:29 | Priority
19 |
| Determination
% H ₂ O | Method/Standard
LA-564-101 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089047 | | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID <i>1111A/C</i>
<i>58.298 57.290</i>
<i>G. 22.9125 T. 23.2933</i>
<i>21.5294 T. 21.9143</i>
<i>22.1071 W1 22.5044</i>
<i>22.1011 W2 22.4941</i>

<i>96.80% ready</i>
<i>57.70% 59.61</i> | | | | |
| Analyst - 1
<i>6858/24</i> | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
<i>#8 Eamott</i> |
| Date
1-3-90 | Time Completed
<i>19:59</i> | Lab Unit Mgr
<i>CJ</i> | <i>B</i> | |
| S4-0800-061 (R-10-83) | | | | |

| | | | | |
|---|-------------------------------|----------------------------|----------------------|---------------------------------|
| Serial No.
F 125.-5010 | Sample Point
SEGMENT-B | Date
11-17-89 | Time Issued
10:10 | Priority
19 |
| Determination
% H ₂ O | Method/Standard
LA-564-101 | Result Units
% | Charge Code
WB75L | Reruns
0 |
| Sample Size
? | Customer ID
089047 | | | |
| Remarks, Calculations, Results:

<i>#214 6.87 grams</i>
G. 22.7238
T. 21.9105
W1 22.4430
W2 22.4477 WTC N 313 4

<i>34.5%</i> | | | | |
| Analyst - 1
<i>6858/24</i> | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
<i>#8 Eamott</i> |
| Date
1-3-90 | Time Completed
<i>CJ</i> | Lab Unit Mgr
<i>off</i> | | |
| S4-0800-061 (R-10-83) | | | | |

Percent Water Analysis

| | | | | |
|--|-------------------------------|-----------------------------|------------------------------|----------------------------------|
| Serial No.
F 100.-5510 | Sample Point
SEGMENT-1 | Date
11-15-89 | Time Issued
10:54 | Priority
19 |
| Determination
% H ₂ O | Method/Standard
LA-564-101 | Result Units
% RECOVERY | Charge Code
WE7SL | Replies
0 |
| Sample Size
? 1mL | | | Customer ID
089045 | |
| Remarks/Calculations/Results:
LMCS CHECK SAMPLE
LMCS ID 11C11AG | | | | |
| 023, 1834 G _a 23.2273
21.8182 T 21.8485
6% 22.3970 W1 22.4333 57.60%
22.3860 W2 22.4227 59.61% | | | | |
| Analyst - 1
<i>635%</i>
Hrs | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
<i>REB</i>
Hrs |
| Date
1-2-90 | Time Completed
20:03 | Lab Unit Mgr
<i>Cope</i> | <i>B.D.</i> | |

1-5-90

S-4000-001 (R-10-83)

| | | | | | |
|---|-----------------|---------------------------|-------------|-------------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 131.-6100 | SEGMENT-H | | 11-17-89 | 10:11 | 18 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| FUSION | LA-549-141 | G/L | WB75L | 0 | |
| Sample Size | | | | Customer ID | |
| ?
DUPLICATE ANALYSIS
GRAMS SAMPLE <u>5873</u>
VOLUME ON
COMPLETION <u>250 ml</u> | | | | <u>089047</u> | |
| Remarks, Calculations, Results:

1.95 -3 g/ml
1.95 -0 g/l 1.95 g/l CG

2.33 -3 g/ml
2.33 -6 g/l WAC N-313-4 | | | | | |
| Analyst -1
<u>6598/H</u> | Analyst -2 | Analyst -3 | Analyst -4 | Analyst -5
<u>CG</u> | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| Date
1-3-90 | Time Completed | Lab Unit Mgr
<u>CG</u> | | | |

84-6800-061 (R-10-83)

| | | | | | |
|--|-----------------|---------------------------|-------------|-------------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 130.-6000 | SEGMENT-G | | 11-17-89 | 10:11 | 18 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| FUSION | LA-549-141 | G/L | WB75L | 0 | |
| Sample Size | | | | Customer ID | |
| ?
#16
GRAMS SAMPLE <u>5817</u>
VOLUME ON
COMPLETION <u>250 ml</u> | | | | <u>089047</u> | |
| Remarks, Calculations, Results:

2.33 -3 g/ml
2.33 -6 g/l CG
2.33 -6 g/l WAC N-313-4 | | | | | |
| Analyst -1
<u>6598/H</u> | Analyst -2 | Analyst -3 | Analyst -4 | Analyst -5
<u>CG</u> | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| Date
1-3-90 | Time Completed | Lab Unit Mgr
<u>CG</u> | | | |

84-6800-061 (R-10-83)

Total Alpha Analysis on the Fusion Dissolution

| | | | | | |
|---|-------------------------------|------------------------------|-----------------------|------------------------|----------------|
| Serial No.
F 308.-6320 | Sample Point
SEGMENT-U | | Date
11-21-89 | Time Issued
8:32 | Priority
18 |
| Determination
AT | Method/Standard
LA-548-101 | Result Units
uCi/L | Charge Code
WB75L | Reruns
0 | |
| Sample Size
? 10ml | | | Customer ID
089050 | | |
| Remarks, Calculations, Results:
REAGENT BLANK

<i><100 -44 mifl</i> | | | | | |
| Analyst - 1
6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | Analyst - 6 |
| Hrs
<i>J. Hopkins</i> | Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-5-90 | Time Completed | Lab Unit Mgr
<i>Cyril</i> | <i>100</i> | <i>sym⁸</i> | |
| 84-0000-001 (R-10-83) | | | | | |

| | | | | | |
|---|-------------------------------|------------------------------|---------------------------------|------------------------|----------------|
| Serial No.
F 105.-6520 | Sample Point
SEGMENT-6 | | Date
11-15-89 | Time Issued
10:55 | Priority
19 |
| Determination
AT | Method/Standard
LA-548-101 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 | |
| Sample Size
? 10ml | | | Customer ID
83B644
089045 | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID _____ | | | | | |
| Analyst - 1
6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | Analyst - 6 |
| Hrs
<i>J. Hopkins</i> | Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-5-90 | Time Completed | Lab Unit Mgr
<i>Cyril</i> | <i>100</i> | <i>sym⁸</i> | |
| 84-0000-001 (R-10-83) | | | | | |

| | | | | | |
|---|-------------------------------|------------------------------|-----------------------|------------------------|----------------|
| Serial No.
F 131.-6120 | Sample Point
SEGMENT-H | | Date
11-17-89 | Time Issued
10:11 | Priority
19 |
| Determination
AT | Method/Standard
LA-548-101 | Result Units
uCi/L | Charge Code
WB75L | Reruns
0 | |
| Sample Size
? 100-10-500 | | | Customer ID
089047 | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE

<i>2.82 mifl</i> | | | | | |
| Analyst - 1
6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | Analyst - 6 |
| Hrs
<i>J. Hopkins</i> | Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-5-90 | Time Completed | Lab Unit Mgr
<i>Cyril</i> | <i>100</i> | <i>sym⁸</i> | |
| 84-0000-001 (R-10-83) | | | | | |

| | | | | | |
|---|-------------------------------|------------------------------|-----------------------|------------------------|----------------|
| Serial No.
F 130.-6020 | Sample Point
SEGMENT-G | | Date
11-17-89 | Time Issued
10:11 | Priority
19 |
| Determination
AT | Method/Standard
LA-548-101 | Result Units
uCi/L | Charge Code
WB75L | Reruns
0 | |
| Sample Size
? 100-10-500 | | | Customer ID
089047 | | |
| Remarks, Calculations, Results:

<i>4.52 mifl</i> | | | | | |
| Analyst - 1
6A543 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | Analyst - 6 |
| Hrs
<i>J. Hopkins</i> | Hrs | Hrs | Hrs | Hrs | Hrs |
| Date
1-5-90 | Time Completed | Lab Unit Mgr
<i>Cyril</i> | <i>100</i> | <i>sym⁸</i> | |
| 84-0000-001 (R-10-83) | | | | | |

Total Alpha Analysis on the Fusion Dissolution

| | | | | | | |
|---|---------------|--------------|------------|-------------------|---------------------|--|
| | <u>18</u> | <u>2</u> | " | <u>1-6-90</u> | <u>WR</u> | |
| | <u>109</u> | <u>-</u> | <u>3</u> | | | |
| | <u>10</u> | <u>/</u> | <u>105</u> | | | |
| | <u>10</u> | <u>/</u> | <u>10</u> | | | |
| Mount # 1 | | | | | | |
| | <u>109</u> | <u>-</u> | <u>3</u> | <u>4.6038E+00</u> | <u>uCi/L alpha</u> | |
| Mount # 2 | | | | | | |
| | <u>105</u> | <u>-</u> | <u>3</u> | <u>4.4501E+00</u> | <u>uCi/L alpha</u> | |
| Mount # 2 | | | | | | |
| | <u>68</u> | <u>-</u> | <u>4</u> | <u>2.8231E+00</u> | <u>uCi/L alpha</u> | |
| Mount # 2 | | | | | | |
| | <u>68</u> | <u>-</u> | <u>4</u> | <u>2.8231E+00</u> | <u>uCi/L alpha</u> | |
| F 130.-060 | | | | | | |
| | <u>18</u> | <u>2</u> | " | <u>1-6-90</u> | <u>WR</u> | |
| | <u>10</u> | <u>/</u> | <u>10</u> | | | |
| | <u>10</u> | <u>/</u> | <u>10</u> | | | |
| Alpha Calculation by VR on 01-06-1990 at 00:41:44 | | | | | | |
| Bet #18 | 2 -inch mount | Alpha eff. : | .2093 | | | |
| Sample size : 19 ml | Dilution : 1 | | | | | |
| Mount # 1 | | | | | | |
| | <u>500</u> | <u>-</u> | <u>3</u> | <u>1.3481E-02</u> | <u>uCi/L alpha</u> | |
| Mount # 2 | | | | | | |
| | <u>10</u> | <u>-</u> | <u>3</u> | <u>1.3481E-02</u> | <u>uCi/L alpha</u> | |
| Mount # 2 | | | | | | |
| | <u>547</u> | <u>-</u> | <u>3</u> | <u>1.1697E-02</u> | <u>uCi/L alpha</u> | |
| Mount # 2 | | | | | | |
| | <u>10</u> | <u>-</u> | <u>3</u> | <u>1.1697E-02</u> | <u>uCi/L alpha</u> | |
| | <u>1</u> | <u>-</u> | <u>4</u> | <u>1.0034E-06</u> | <u>uCi/ea alpha</u> | |
| | <u>10</u> | <u>-</u> | <u>4</u> | <u>1.0034E-06</u> | <u>uCi/ea alpha</u> | |
| | <u>10</u> | <u>/</u> | <u>100</u> | | | |
| F 105.-6520 | | | | | | |
| | <u>105</u> | <u>-</u> | <u>4</u> | <u>1.0034E-06</u> | <u>uCi/ea alpha</u> | |
| F 308.-6320 AT | | | | | | |
| | <u>105</u> | <u>-</u> | <u>4</u> | <u>1.0034E-06</u> | <u>uCi/ea alpha</u> | |

Total Alpha Analysis on the Fusion Dissolution

| | | | | |
|--|-----------------|--------------|-------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 297.-6520 | SEGMENT-J | 11-21-89 | 8:30 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Peruns |
| AT | LA-548-101 | % RECOVERY | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? 10ul | | 089050 | | |
| Remarks, Calculations, Results: | | | | |
| LMCS CHECK SAMPLE
LMCS ID _____ | | | | |
| 100.3 ⁰⁷⁰

1.003 ⁻² / 1.0001 ⁻² | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| 6A543
Hrs | Hrs | Hrs | Hrs | Hrs |
| John Hopkins
Date 1-5-90 | Time Completed | Lab Unit Mgr | Craig | QMV-LT |
| SA-6800-061 (R-10-83) | | | | |

| | | | | |
|--|-----------------|--------------|-----------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 296.-6220 | SEGMENT-I | 11-21-89 | 8:30 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Peruns |
| AT | LA-548-101 | % RECOVERY | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? 100 ul | | 89-050 | | |
| Remarks, Calculations, Results: | | | | |
| SPIKE SAMPLE
SPIKE ID 83844
SPIKE VOLUME 10 ml | | | | |
| $\frac{[(9.901^{-1})(1.0^{-4}) - (1.935^{-2})(1.0^{-4})]}{(0.01)(1.0001^{-2})} (100) = 97.1\%$ | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| 6A543
Hrs | Hrs | Hrs | Hrs | Hrs |
| Date 1-5-90 | Time Completed | Lab Unit Mgr | Craig M Seidell | |
| SA-6800-061 (R-10-83) | | | | |

Total Alpha Analysis on the Fusion Dissolution

182' 1-6-90 VR

473 - .3

Alpha Calculation by VR on 01-06-1990 at 00:45:14
Det #18 2-inch count Alpha eff. : .2003
Sample size : 10 mL Dilution : 1

Mount #1

473
10 ----- - 0.3 = 1.016E-02 uCi/L alpha

Mount #2

464
10 ----- - 0.3 = 9.950E-03 uCi/L alpha

182' - 6.3 = 1.92E-01 uCi/L alpha

F 296.-6220 AT

F 297.-6520 AT

Total Beta Analysis on the Fusion Dissolution

| | | | | |
|---|-----------------|---------------|-------------|-------------|
| 7-3 F948 Seg Com 8 | | | | |
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 308.-6325 | SEGMENT-U | 11-21-89 | 8:32 | 18 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| TB | LA-548-101 | uCi/L | WB75L | 0 |
| Sample Size | Customer ID | | | |
| ? 10ml | 089050 | | | |
| Remarks, Calculations, Results:
REAGENT BLANK | | | | |
| <i><2.58 H weifl</i> | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| <i>6A543</i> | | | | |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| <i>J. Hopkins</i> | | | | |
| Date | Time Completed | Lab Unit Mgr | | |
| 1-5-90 | | <i>Carter</i> | <i>9M4</i> | |
| SI-0000-001 (R-10-82) | | | | |
| 596 | | | | |
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 131.-6125 | SEGMENT-H | 11-17-89 | 10:11 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| TB | LA-548-101 | uCi/L | WB75L | 0 |
| Sample Size | Customer ID | | | |
| ? 100-10-500 | 089047 | | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE | | | | |
| <i>1.45³ weifl</i> | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| <i>6A543</i> | | | | |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| <i>J. Hopkins</i> | | | | |
| Date | Time Completed | Lab Unit Mgr | | |
| 1-5-90 | | <i>Carter</i> | <i>9M4</i> | |
| SI-0000-001 (R-10-82) | | | | |
| 7-8 | | | | |
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 130.-6025 | SEGMENT-G | 11-17-89 | 10:11 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| TB | LA-548-101 | uCi/L | WB75L | 0 |
| Sample Size | Customer ID | | | |
| ? 100-10-500 | 089047 | | | |
| Remarks, Calculations, Results: | | | | |
| <i>2.12³ weifl</i> | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| <i>6A543</i> | | | | |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| <i>J. Hopkins</i> | | | | |
| Date | Time Completed | Lab Unit Mgr | | |
| 1-5-90 | | <i>Carter</i> | <i>9M4</i> | |
| SI-0000-001 (R-10-82) | | | | |

Total Beta Analysis on the Fusion Dissolution

| | |
|---|--|
| <p>8 2" 1-6-90VR
 <u>73633</u> - 6
 <u>10</u>
 <u>73335</u> -
 <u>10</u></p> <p>Beta Calculation by VR on 01-06-1990 at 00:48:16
 Det #18 2-inch mount Beta eff. : .3151
 Sample size : 1 mL Dilution : 202</p> <p>Mount # 1</p> <p>73633
 ----- - 6.0 = 2.1246E+03 uCi/L beta
 10</p> <p>Mount # 2</p> <p>73335
 ----- - 6.0 = 2.1160E+03 uCi/L beta
 10</p> | <p>2.02E2</p> <p>18 2" 1-6-90VR
 <u>49597</u> - 6
 <u>10</u>
 <u>51114</u> -
 <u>10</u></p> <p>Beta Calculation by VR on 01-06-1990 at 00:49:05
 Det #18 2-inch mount Beta eff. : .3151
 Sample size : 1 mL Dilution : 202</p> <p>Mount # 1</p> <p>49597
 ----- - 6.0 = 1.4305E+03 uCi/L beta
 10</p> <p>Mount # 2</p> <p>51114
 ----- - 6.0 = 1.4745E+03 uCi/L beta
 10</p> |
| <p>18 2" 1-6-90VR
 <u>9489</u> -
 <u>10</u>
 <u>9879</u> -
 <u>10</u></p> <p>Beta Calculation by VR on 01-06-1990 at 00:49:41
 Det #18 2-inch mount Beta eff. : .3151
 Sample size : 10 mL Dilution : 1</p> <p>Mount # 1</p> <p>9489
 ----- - 6.0 = 1.3479E-01 uCi/L beta
 10</p> <p>Mount # 2</p> <p>9879
 ----- - 6.0 = 1.4037E-01 uCi/L beta
 10</p> | <p>F 130.-6025</p> <p>18 2" 1-6-90VR
 <u>56</u> - 6
 <u>10</u>
 <u>50</u> -
 <u>10</u></p> <p>Beta Calculation by VR on 01-06-1990 at 02:38:45
 Det #18 2-inch mount Beta eff. : .3151
 Sample size : 1 ea Dilution : 1</p> <p>Mount # 1</p> <p>56
 ----- - 6.0 < 2.5801E-06 uCi/ea beta
 10</p> <p>Mount # 2</p> <p>50
 ----- - 6.0 < 2.5801E-06 uCi/ea beta
 10</p> |
| <p>F 105.-6525</p> | <p>F 308.-6325 TB</p> |

Total Beta Analysis on the Fusion Dissolution

| 7.8 F949 See Comp 8 | | | | | |
|--|-----------------|--------------|-------------|-------------|--|
| Serial No. | Sample Point | Date | Time issued | Priority | |
| F 296.-6225 | SEGMENT-I | 11-21-89 | 8:30 | 19 | |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| TB | LA-548-101 | % RECOVERY | WB75L | 0 | |
| Sample Size | 500 | Customer ID | 089050 | | |
| ? 100ml | | | | | |
| Remarks Calculations, Results:
SPIKE SAMPLE F294
SPIKE ID 83844
SPIKE VOLUME 10 ml

2.154 ⁻¹ - 5.493 = 1.60 ⁻¹
100 → 1.60 ⁻¹
1.390 ⁻¹
See back of card | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| 6A543 | | | | | |
| J. Hopkins | Hrs | Hrs | Hrs | Hrs | |
| Date | Time Completed | Lab Unit Mgr | | | |
| 1-5-90 | | Cox | SJM | | |
| SI-0000-001 (R-10-83) | | | | | |

| 182 F950 See Comp 8 | | | | | |
|--|-----------------|--------------|-----------------|-------------|--|
| Serial No. | Sample Point | Date | Time issued | Priority | |
| F 297.-6525 | SEGMENT-J | 11-21-89 | 8:30 | 19 | |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| TB | LA-548-101 | % RECOVERY | WB75L | 0 | |
| Sample Size | 500 | Customer ID | 83844
089050 | | |
| ? 10ml | | | | | |
| Remarks Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID _____ | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| 6A543 | | | | | |
| J. Hopkins | Hrs | Hrs | Hrs | Hrs | |
| Date | Time Completed | Lab Unit Mgr | Cox | | |
| 1-5-90 | | SJM | SJM | | |
| SI-0000-001 (R-10-83) | | | | | |

Total Beta Analysis on the Fusion Dissolution

Date too low to calculate .100

18/2

18 2 1-6-90

94/10
10
9327
10

Beta Calculation by AD on 01-05-1990 at 18:21:51
Bet #18 2-inch count Beta eff. : .3111
Sample size : 10 ml Dilution : 1

Mount #1

18/10
10
1.0 = 1.353E+01 dcln beta

Mount #1

15/24
10
6

Beta Calculation by AD on 01-05-1990 at 18:21:51
Bet #18 2-inch count Beta eff. : .3151
Sample size : 1 ml Dilution : 1

Mount #1

14892
10

15124
10
6.0 = 2.155E+01 dcln beta

Mount #2

1892

10
6.0 = 2.120E+01 dcln beta

F 297.-6825 TB

F 296.-6225 TB

Gamma Energy Analysis of the Fusion Dissolution

3888 F 44% Seg Comp

| | | | | |
|--|-------------------------------|--|----------------------|--------------------|
| Serial No.
F 308.-6330 | Sample Point
SEGMENT-U | Date
11-21-89 | Time Issued
8:32 | Priority
18 |
| Determination
GEA | Method/Standard
LA-548-121 | Result Units
uCi/L | Charge Code
WB75L | Runs
0 |
| Sample Size
? 1 ml | | Customer ID
089050 | | |
| Remarks, Calculations, Results:
REAGENT BLANK

<i>Cs¹³⁷ 249' ± 62%</i> | | | | |
| Analyst - 1
69769/ems | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
1-9-90 | Time Completed | Lab Unit Mgr
<i>Craig K. Kiedel DMS</i> | | |

54-9800-001 (R-10-83)

2747

| | | | | |
|---|-------------------------------|--|----------------------|--------------------|
| Serial No.
F 131.-6130 | Sample Point
SEGMENT-H | Date
11-17-89 | Time Issued
10:11 | Priority
19 |
| Determination
GEA | Method/Standard
LA-548-121 | Result Units
uCi/L | Charge Code
WB75L | Runs
0 |
| Sample Size
? 100 λ Li $\frac{1}{10}$ | | Customer ID
089047 | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE

<i>Cs¹³⁷ 3.37 uCi/l</i> | | | | |
| Analyst - 1
69769/ems | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
1-9-90 | Time Completed | Lab Unit Mgr
<i>Craig K. Kiedel DMS</i> | | |

54-9800-001 (R-10-83)

4885

| | | | | |
|---|-------------------------------|--|----------------------|--------------------|
| Serial No.
F 129.-6530 | Sample Point
SEGMENT-F | Date
11-17-89 | Time Issued
10:11 | Priority
26 |
| Determination
GEA | Method/Standard
LA-548-121 | Result Units
% RECOVERY | Charge Code
F215C | Runs
0 |
| Sample Size
? 500 λ Li $\frac{1}{2}$ | | Customer ID | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 81348 | | | | |
| Analyst - 1
69769/ems | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
1-9-90 | Time Completed | Lab Unit Mgr
<i>Craig K. Kiedel DMS</i> | | |

54-9800-001 (R-10-83)

3886

| | | | | |
|--|-------------------------------|--|----------------------|--------------------|
| Serial No.
F 130.-6030 | Sample Point
SEGMENT-G | Date
11-17-89 | Time Issued
10:11 | Priority
19 |
| Determination
GEA | Method/Standard
LA-548-121 | Result Units
uCi/L | Charge Code
WB75L | Runs
0 |
| Sample Size
? 100 λ Li $\frac{1}{10}$ | | Customer ID
089047 | | |
| Remarks, Calculations, Results: | | | | |
| Analyst - 1
DMS/69769 | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
1-9-90 | Time Completed | Lab Unit Mgr
<i>Craig K. Kiedel DMS</i> | | |

54-9800-001 (R-10-83)

Cs¹³⁷ 4.21 uCi/l

Gamma Energy Analysis of the Fusion Dissolution

| | | | | |
|---|-------------------------------|---|----------------------|--------------------|
| F950 Seg Comp 8 | | | | |
| Serial No.
F 297.-6530 | Sample Point
SEGMENT-J | Date
11-21-89 | Time Issued
8:30 | Priority
19 |
| Determination
GEA | Method/Standard
LA-54B-121 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 |
| Sample Size
? 5802 | | Customer ID | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID <u>89044</u> | | | | |
| $\begin{array}{l} \text{Co-187} \\ 3.78 / 3.813' \\ \text{Co-60} 2.25' / 2.34' \end{array}$ 99.10% | | | | |
| Analyst - 1
TMS/69769 | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
94% |
| Date
1-9-90 | Time Completed | Lab. Unit Mgr
<u>Carroll Field</u> TMS | | |

SA-6000-001 (P-10-63)

| | | | | |
|---|-------------------------------|---|----------------------|--------------------|
| F949 Seg Comp 8 | | | | |
| Serial No.
F 296.-6230 | Sample Point
SEGMENT-I | Date
11-21-89 | Time Issued
8:30 | Priority
19 |
| Determination
GEA | Method/Standard
LA-54B-121 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 |
| Sample Size
? 1ml | | Customer ID
089050 | | |
| Remarks, Calculations, Results:
SPIKE SAMPLE F294
SPIKE ID <u>89044</u>
SPIKE VOLUME <u>1001</u> | | | | |
| $4.81 - 1.03 = \frac{(3.78)}{3.813} \times 100\%$ 99.10% | | | | |
| Analyst - 1
69769/TMS | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
94% |
| Date
1-9-90 | Time Completed | Lab. Unit Mgr
<u>Carroll Field</u> TMS | | |

SA-6000-001 (P-10-63)

Uranium Analysis of the Fusion Dissolution

| | | | | |
|---|-----------------|--------------|--------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 131.-6140 | SEGMENT-H | 11-17-89 | 10:11 | 23 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| U | LA-925-106 | G/L | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? 100-10-100 | | 089047 | | |
| Remarks, Calculations, Results: | | | | |
| DUPLICATE SAMPLE
Sample : .14
$\text{Spk Vol: } 100x$ $\text{Spk ID: } 5.62^{-4} \frac{(0.14)(5.62^{-4})(0.1)(1010)}{(0.02)(0.44)} = 2.05 \times 10^{-2} \text{ g/l}$ | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| GC269
Mary Tracy | | | <i>M. R.</i> | |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr | | |
| 1-5-90 | | <i>Cyr</i> | <i>OK</i> | |
| 54-8800-061 (R-10-B3) | | | | |

| | | | | |
|---|-----------------|--------------|--------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 130.-6040 | SEGMENT-G | 11-17-89 | 10:11 | 23 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| U | LA-925-106 | G/L | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? 100-10-100 | | 089047 | | |
| Remarks, Calculations, Results: | | | | |
| Sample : .16
$\text{Spk Vol: } 100x$ $\text{Spk ID: } 5.62^{-4} \frac{(0.16)(5.62^{-4})(0.1)(1010)}{(0.02)(0.46)} = 3.03 \times 10^{-2} \text{ g/l}$ | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| GC269
Mary Tracy | | | <i>R. R.</i> | |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr | | |
| 1-5-90 | | <i>Cyr</i> | <i>OK</i> | |
| 54-8800-061 (R-10-B3) | | | | |

| | | | | |
|---|-----------------|--------------|--------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 120.-6340 | SEGMENT-21 | 11-15-89 | 10:58 | 18 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| U | LA-925-106 | G/L | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? 100ml - 10ml - 100ml | | 089045 | | |
| Remarks, Calculations, Results: | | | | |
| REAGENT BLANK Spk ID: 54B38 Value: 5.62×10^{-4} g/l
Volume: 100 ml
$\text{Spk Vol: } 100x$ $\text{Spk ID: } 5.62^{-4} \frac{(0.06)(5.62^{-4})(0.1)(1010)}{(0.02)(0.06)} = 1.04 \times 10^{-2} \text{ g/l}$ | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| GC269
Mary Tracy | | | <i>M. R.</i> | |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr | | |
| 1-5-90 | | <i>Cyr</i> | <i>OK</i> | |
| 54-8800-061 (R-10-B3) | | | | |

| | | | | |
|--|-----------------|--------------|-------------|--------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 297.-6540 | SEGMENT-J | 11-21-89 | 8:30 | 23 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| U | LA-925-106 | % RECOVERY | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? 100-10-100 | | 089050 | | |
| Remarks, Calculations, Results: | | | | |
| LMCS CHECK SAMPLE
LMCS ID: 58B38
$\text{Spk Vol: } 100x$ $\text{Spk ID: } 5.62^{-4} \frac{(0.1)(5.62^{-4})(0.1)(1010)}{(0.02)(0.1)} = 3.33 \times 10^{-2} \text{ g/l}$ | | | | |
| (Cover for recalculation) 46-17 | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| GC269
Mary Tracy | | | | <i>C. R.</i> |
| Hrs | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr | | |
| 1-5-90 | | <i>Cyr</i> | <i>OK</i> | |
| 54-8800-061 (R-10-B3) | | | | |

Uranium Analysis of the Fusion Dissolution

| | | | | | |
|--|-------------------------------|---|------------------------|----------------------|----------------|
| Serial No.
F 105.-6540 | Sample Point
SEGMENT-6 | | Date
11-15-89 | Time Issued
10:55 | Priority
23 |
| Determination
U | Method/Standard
LA-925-106 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 | |
| Sample Size
? 100-10-100 | | | Customer ID
89-045- | | |
| Remarks, Calculations, Results:
SPK Vol: 100A Smp1: .16
LMCS CHECK SAMPLE 9SPK ID: 562-4 Smp1+SPK: .46
LMCS ID: 58B38
$(.00099)(5.676 \times 10^{-2})(.16) = 2.95 \times 10^{-2}$ $(.00099)[(46)(\frac{5.7}{5.6})] - .16 = \frac{2.95 \times 10^{-2}}{2.99 \times 10^{-2}}$ 98.7% | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| Date
1-5-90 | Time Completed | Lab Unit Mgr
<i>Zal M. Red</i> (Signature) | S-2000-001 (P-10-03) | | |

| | | | | | |
|--|-------------------------------|---|------------------------|---------------------|----------------|
| Serial No.
F 297.-6540 | Sample Point
SEGMENT-3 | | Date
11-21-89 | Time Issued
8:30 | Priority
23 |
| Determination
U | Method/Standard
LA-925-106 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 | |
| Sample Size
? 100-10-100 | | | Customer ID
89-045- | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE Smp1: .17
LMCS ID: 58B38
$SPK Vol: 100A Smp1 + SPK: .46$ $\frac{3.24 \times 10^{-2}}{2.99 \times 10^{-2}} = 108.3$ $SPK ID: 5.62-4$ $(.00059)(5.676 \times 10^{-2})(.17) = 3.24 \times 10^{-2}$ $(.00059)[(46)(\frac{5.7}{5.6})] - .17$ | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| Date
1-5-90 | Time Completed | Lab Unit Mgr
<i>Zal M. Red</i> (Signature) | S-2000-001 (P-10-03) | | |

Uranium Analysis of the Fusion Dissolution

$$\frac{(1.60099)(5.476 \times 10^{-02})(.17)}{(1.00099) [5.46(\frac{5.2}{5.6}) - .17]} = \frac{3.24 \times 10^{-02}}{2.99 \times 10^{-02}} = 108.303$$

1297.0340

Water Digestion

| | | | | | |
|---|-----------------|--------------|-------------|------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 136.-7100 | SEGMENT-M | | 11-17-89 | 10:12 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Runno | |
| H2O-DGST | LA-504-101 | G/L | WB75L | 0 | |
| Sample Size | | | Customer ID | 089047 | |
| ? | | | | | |
| Remarks, Calculations, Results:

DUPLICATE ANALYSIS
GRAMS SAMPLE <u>4299</u> #209
VOLUME ON 2.88 grams
COMPLETION <u>50ml</u> 8.60^{-3} g/ml | | | | | |
| <u>WTC N 3134</u> | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Assigned Chemist | |
| 6B107 | | | <u>CJA</u> | <u>6B107</u> | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| 25 min | | | | | |
| Date | Time Completed | Lab Unit Mgr | <u>CJA</u> | GMS | |
| 84-8800-061 (P-10-83) | | | | | |

| | | | | | |
|---|-----------------|--------------|-------------|------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 137.-7200 | SEGMENT-N | | 11-17-89 | 10:13 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Runno | |
| H2O-DGST | LA-504-101 | % RECOVERY | WB75L | 0 | |
| Sample Size | | | Customer ID | 089047 | |
| ? | | | | | |
| Remarks, Calculations, Results:

SPIKED ANALYSIS
GRAMS SAMPLE <u>5015</u> #209
VOLUME ON 50ml
COMPLETION <u>50ml</u> 1.00⁻² g/ml
VOLUME SPIKE 1.00⁻² g/ml
SPIKE ID _____ | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Assigned Chemist | |
| 6B107 | | | <u>CJA</u> | <u>6B107</u> | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| 25 min | | | | | |
| Date | Time Completed | Lab Unit Mgr | <u>CJA</u> | GMS | |
| 84-8800-061 (P-10-83) | | | | | |

| | | | | | |
|---|-----------------|--------------|-------------|------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 135.-7000 | SEGMENT-L | | 11-17-89 | 10:12 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Runno | |
| H2O-DGST | LA-504-101 | G/L | WB75L | 0 | |
| Sample Size | | | Customer ID | 089047 | |
| ? | | | | | |
| Remarks, Calculations, Results:

GRAMS SAMPLE <u>4293</u> #209
VOLUME ON 50ml
COMPLETION <u>50ml</u> 8.59^{-3} g/ml | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Assigned Chemist | |
| 6B107 | | | <u>CJA</u> | <u>6B107</u> | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| 25 min | | | | | |
| Date | Time Completed | Lab Unit Mgr | <u>CJA</u> | GMS | |
| 84-8800-061 (P-10-83) | | | | | |

Ion Chromatographic Analysis of the Water Digestion - Fluoride Analysis

| | | | | |
|---|--------------------------|----------------------------|------------------------------|--------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 726.-7371 | SEGMENT-W | 12-11-89 | 8:20 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| F | LA-533-105 | PPM | WB75L | 0 |
| Sample Size | | | | |
| ? Direct | Customer ID | | | |
| Remarks, Calculations, Results:
REAGENT BLANK. | | | | |
| <i><1 ppm</i> | | | | |
| Analyst - 1
<i>6B107/avw</i>
Hrs | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | Customer ID
<i>089047</i> | |
| 54-8800-001 (R-10-83) | | | | |

| | | | | |
|---|--------------------------|----------------------------|------------------------------|--------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 714.-7571 | SEGMENT-K | 12-11-89 | 8:16 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| F | LA-533-105 | % RECOVERY | WB75L | 0 |
| Sample Size | | | | |
| 100-10 | Customer ID | | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID <i>UC1171</i> | | | | |
| <i>98.6%</i> | | | | |
| Analyst - 1
<i>6B107/avw</i>
Hrs | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | Customer ID
<i>089047</i> | |
| 54-8800-001 (R-10-83) | | | | |

| | | | | |
|---|------------------------------|----------------------------|------------------------------|--------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 136.-7171 | SEGMENT-M | 11-17-89 | 10:13 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| F | LA-533-105 | PPM | WB75L | 0 |
| Sample Size | | | | |
| ? /100-0 | Customer ID
<i>089047</i> | | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE | | | | |
| <i><10.1 ppm</i> | | | | |
| Analyst - 1
<i>6B107/avw</i>
Hrs | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | Customer ID
<i>089047</i> | |
| 54-8800-001 (R-10-83) | | | | |

| | | | | |
|--|------------------------------|----------------------------|------------------------------|--------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 135.-7071 | SEGMENT-L | 11-17-89 | 10:12 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| F | LA-533-105 | PPM | WB75L | 0 |
| Sample Size | | | | |
| ? /100-0 | Customer ID
<i>089047</i> | | | |
| Remarks, Calculations, Results: | | | | |
| <i><10.1 ppm</i> | | | | |
| Analyst - 1
<i>6B107/avw</i>
Hrs | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | Customer ID
<i>089047</i> | |
| 54-8800-001 (R-10-83) | | | | |

Ion Chromatographic Analysis of the Water Digestion - Fluoride Analysis

| | | | | | |
|--|-----------------|--------------|-------------|-------------|-----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 138.-7571 | SEGMENT-O | | 11-17-89 | 10:13 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| F | LA-533-105 | % RECOVERY | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| 100-10 | | | 089047 | | |
| Remarks, Calculations, Results: | | | | | |
| LMCS CHECK SAMPLE
LMCS ID <u>6C11A1</u>
34.8% | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | Comment |
| <u>6B107/4442</u> | Hrs | Hrs | Hrs | Hrs | <u>OK</u> |
| .5 | | | | | |
| Date | Time Completed | Lab Unit Mgr | <u>Cja</u> | | |
| 8/16/89 | | | | | |
| SA-0800-081 (R-10-82) | | | | | |

| | | | | | |
|--|-----------------|--------------|---------------------------|-------------|-----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 717.-7271 | SEGMENT-N | | 12-11-89 | 8:17 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| F | LA-533-105 | % RECOVERY | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| ? 100-10 | | | 89082 | | |
| Remarks, Calculations, Results: | | | | | |
| SPIKE SAMPLE
SPIKE ID <u>35C9-67</u>
SPIKE VOLUME <u>3.0015 ml</u>
$\frac{(5.3 \text{ ml}) (250) - 0}{5.3 - 3 \text{ ml}} = \frac{13.25 \text{ ppm}}{0.3 \text{ ml}} = 44.17 \text{ ppm}$ $\frac{(1.3 \text{ ml}) (47 \text{ ppm})}{5.3 \text{ ml}} = (101)$ $X - 100 = 98.0\%$ | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | Comment |
| <u>6B107</u> | Hrs | Hrs | Hrs | Hrs | <u>OK</u> |
| <u>100% & light</u> | | | | | |
| Date | Time Completed | Lab Unit Mgr | <u>Zell Dugay Sutliff</u> | | |
| 2-16-50 | | | SA-0800-081 (R-10-82) | | |

Ion Chromatographic Analysis of the Water Digestion - Chloride Analysis

| | | | | | |
|--|-------------------------------|----------------------------|----------------------|---|----------------|
| Serial No.
F 726.-7372 | Sample Point
SEGMENT-W | | Date
12-11-89 | Time issued
8:20 | Priority
26 |
| Determination
CL | Method/Standard
LA-533-105 | Result Units
PPM | Charge Code
WB75L | Reruns
0 | |
| Sample Size
<i>? Direct</i> | | | Customer ID | | |
| Remarks, Calculations, Results:
REAGENT BLANK | | | | | |
| <i><1 ppm</i> | | | | | |
| Analyst-1
68107/rew | Analyst-2
Hrs
.5 | Analyst-3
Hrs | Analyst-4
Hrs | Analyst-5 <i>Chloride</i>
68107/rew
Hrs
.5 | |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>dk</i> | Lab Unit Mgr
<i>CJW</i> | |
| SI-8800-081 (R-10-83) | | | | | |

| | | | | | |
|---|-------------------------------|----------------------------|----------------------|---|----------------|
| Serial No.
F 714.-7572 | Sample Point
SEGMENT-K | | Date
12-11-89 | Time issued
8:16 | Priority
26 |
| Determination
CL | Method/Standard
LA-533-105 | Result Units
% RECOVERY | Charge Code
WB75L | Reruns
0 | |
| Sample Size
100-10 | | | Customer ID | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID <i>PC11A1</i> | | | | | |
| <i>97.7%</i> | | | | | |
| Analyst-1
68107/rew | Analyst-2
Hrs
.5 | Analyst-3
Hrs | Analyst-4
Hrs | Analyst-5 <i>Chloride</i>
68107/rew
Hrs
.5 | |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>dk</i> | Lab Unit Mgr
<i>CJW</i> | |
| SI-8800-081 (R-10-83) | | | | | |

| | | | | | |
|---|-------------------------------|----------------------------|------------------------------|---|----------------|
| Serial No.
F 136.-7172 | Sample Point
SEGMENT-M | | Date
11-17-89 | Time issued
10:13 | Priority
19 |
| Determination
CL | Method/Standard
LA-533-105 | Result Units
PPM | Charge Code
WB75L | Reruns
0 | |
| Sample Size
<i>? 100-10</i> | | | Customer ID
<i>089047</i> | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE | | | | | |
| <i><10.1 ppm</i> | | | | | |
| Analyst-1
68107/rew | Analyst-2
Hrs
.5 | Analyst-3
Hrs | Analyst-4
Hrs | Analyst-5 <i>Chloride</i>
68107/rew
Hrs
.5 | |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>dk</i> | Lab Unit Mgr
<i>CJW</i> | |
| SI-8800-081 (R-10-83) | | | | | |

| | | | | | |
|---------------------------------|-------------------------------|----------------------------|------------------------------|---|----------------|
| Serial No.
F 135.-7072 | Sample Point
SEGMENT-L | | Date
11-17-89 | Time issued
10:12 | Priority
19 |
| Determination
CL | Method/Standard
LA-533-105 | Result Units
PPM | Charge Code
WB75L | Reruns
0 | |
| Sample Size
<i>? 100-10</i> | | | Customer ID
<i>089047</i> | | |
| Remarks, Calculations, Results: | | | | | |
| <i><10.1 ppm</i> | | | | | |
| Analyst-1
68107/rew | Analyst-2
Hrs
.5 | Analyst-3
Hrs | Analyst-4
Hrs | Analyst-5 <i>Chloride</i>
68107/rew
Hrs
.5 | |
| Date
2/16/80 | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>dk</i> | Lab Unit Mgr
<i>CJW</i> | |
| SI-8800-081 (R-10-83) | | | | | |

Ion Chromatographic Analysis of the Water Digestion - Chloride Analysis

| | | | | | |
|---|-------------------------------|-----------------------------|-----------------------|----------------------|----------------|
| Serial No.
F 138.-7572 | Sample Point
SEGMENT-0 | | Date
11-17-89 | Time Issued
10:13 | Priority
19 |
| Determination
CL | Method/Standard
LA-533-105 | Result Units
% RECOVERY | Charge Code
WB75L | Re runs
0 | |
| Sample Size
100-10 | | | Customer ID
089047 | | |
| Remarks, Calculations, Results:

LMCS CHECK SAMPLE
LMCS ID: <u>411471</u>

<i>101.7%</i> | | | | | |
| Analyst - 1
<u>108107/NEW</u> | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| Hrs
<u>.5</u> | Hrs | Hrs | Hrs | Hrs | |
| Date
<u>2/16/80</u> | Time Completed | Lab Unit Mgr
<u>John</u> | <u>01</u> | | |
| SI-8000-001 (R-10-83) | | | | | |

| | | | | | |
|---|-------------------------------|-------------------------------|----------------------|---------------------|----------------|
| Serial No.
F 717.-7272 | Sample Point
SEGMENT-N | | Date
12-11-89 | Time Issued
8:17 | Priority
26 |
| Determination
CL | Method/Standard
LA-533-105 | Result Units
% RECOVERY | Charge Code
WB75L | Re runs
0 | |
| Sample Size
? | | | Customer ID
89082 | | |
| Remarks, Calculations, Results:

SPIKE SAMPLE
SPIKE ID 33C9-67
SPIKE VOLUME .300/5 ml

$\frac{(5.3 \text{ ml})}{(5.3 - .3 \text{ ml})} (350) - 00 = \frac{(10.481 \text{ l})}{(5.818 \text{ l})} \times 100 = 108.2\%$
$\frac{(1.3 \text{ ml})(60)}{5.3 \text{ ml}} (101)$ | | | | | |
| Analyst - 1
<u>68107</u> | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| Hrs
<u>10.00</u> | Hrs | Hrs | Hrs | Hrs | |
| Date
<u>2-16-80</u> | Time Completed | Lab Unit Mgr
<u>Talita</u> | <u>Bob</u> | <u>Dynamite</u> | |
| SI-8000-001 (R-10-83) | | | | | |

Ion Chromatographic Analysis of the Water Digestion - Nitrate Analysis

| | | | | | |
|---------------------------------|-----------------|----------------------------|---------------------------------|-----------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 726.-7373 | SEGMENT-W | | 12-11-89 | 8:20 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| N03 | LA-533-105 | PPM | WB75L | 0 | |
| Sample Size | | | | Customer ID | |
| <i>? Direct</i> | | | | | |
| Remarks, Calculations, Results: | | | | | |
| REAGENT BLANK | | | | | |
| <i><1 ppm</i> | | | | | |
| Analyst - 1
<i>68107/mw</i> | Analyst - 2 | Analyst - 3 | Analyst - 4
<i>(P)P34171</i> | Analyst - 5 (Planned) | |
| Hrs
<i>.5</i> | Hrs | Hrs | Hrs | Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>off</i> | | |
| SI-9800-061 (R-10-83) | | | | | |

| | | | | | |
|---|-----------------|----------------------------|---------------------------------|-----------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 714.-7573 | SEGMENT-K | | 12-11-89 | 8:16 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| N03 | LA-533-105 | % RECOVERY | WB75L | 0 | |
| Sample Size | | | | Customer ID | |
| <i>100-10</i> | | | | | |
| Remarks, Calculations, Results: | | | | | |
| <i>LMCS CHECK SAMPLE</i>
<i>LMCS ID UC1172</i> | | | | | |
| <i>99.3%</i> | | | | | |
| Analyst - 1
<i>68107/mw</i> | Analyst - 2 | Analyst - 3 | Analyst - 4
<i>(P)P34171</i> | Analyst - 5 (Planned) | |
| Hrs
<i>.5</i> | Hrs | Hrs | Hrs | Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>off</i> | | |
| SI-9800-061 (R-10-83) | | | | | |

| | | | | | |
|---------------------------------|-----------------|----------------------------|---------------------------------|-----------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 136.-7173 | SEGMENT-M | | 11-17-89 | 10:13 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| N03 | LA-533-105 | PPM | WB75L | 0 | |
| Sample Size | | | | Customer ID | |
| <i>? 100-10</i> | | | | | |
| Remarks, Calculations, Results: | | | | | |
| DUPLICATE SAMPLE | | | | | |
| <i>2.225² ppm</i> | | | | | |
| Analyst - 1
<i>68107/mw</i> | Analyst - 2 | Analyst - 3 | Analyst - 4
<i>(P)P34171</i> | Analyst - 5 (Planned) | |
| Hrs
<i>.5</i> | Hrs | Hrs | Hrs | Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>off</i> | | |
| SI-9800-061 (R-10-83) | | | | | |

| | | | | | |
|---------------------------------|-----------------|----------------------------|---------------------------------|-----------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 135.-7073 | SEGMENT-L | | 11-17-89 | 10:12 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| N03 | LA-533-105 | PPM | WB75L | 0 | |
| Sample Size | | | | Customer ID | |
| <i>? 100-10</i> | | | | | |
| Remarks, Calculations, Results: | | | | | |
| <i>2.565² ppm</i> | | | | | |
| Analyst - 1
<i>68107/mw</i> | Analyst - 2 | Analyst - 3 | Analyst - 4
<i>(P)P34171</i> | Analyst - 5 (Planned) | |
| Hrs
<i>.5</i> | Hrs | Hrs | Hrs | Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>off</i> | | |
| SI-9800-061 (R-10-83) | | | | | |

Ion Chromatographic Analysis of the Water Digestion - Nitrate Analysis

| | | | | |
|--|-----------------|---------------|--------------|-------------|
| Serial No. | Sample Point | Date | Time Started | Priority |
| F 13B.-7573 | SEGMENT-0 | 11-17-89 | 10:13 | 19 |
| Determination | Method Standard | Reagent Units | Charge Code | Recurve |
| NO.3 | LA-533-105 | % RECOVERY | WR75L | 0 |
| Sample Set | | | | Customer ID |
| 100-10 | | | | 089047 |
| Remarks, Calculations, Results: | | | | |
| LMCS CHECK SAMPLE
LMCS ID <u>62947</u> | | | | |
| 99.7% | | | | |
| <u>Analyte - 1</u> <u>Analyte - 2</u> <u>Analyte - 3</u> <u>Analyte - 4</u>
<u>63027/1000</u> <u>ppm</u> <u>ppm</u> <u>ppm</u>
<u>5</u> <u>ppm</u> <u>ppm</u> <u>ppm</u>
<u>Date</u> <u>Time Completed</u> <u>Lab Unit Used</u> <u>Comments</u>
<u>2/16/90</u> <u>10:13</u> <u>ppm</u> <u>100% Complete</u> | | | | |
| <u>Sample Point</u> <u>Date</u> <u>Time Started</u>
<u>F 717.-7273</u> <u>12-11-89</u> <u>8:17</u>
<u>Determination</u> <u>Method/Standard</u> <u>Reagent Units</u>
<u>NO.3</u> <u>LA-533-105</u> <u>% RECOVERY</u>
<u>Sample Set</u> <u>?</u>
<u>Customer ID</u> <u>WB75L</u>
<u>Charge Code</u> <u>WB75L</u>
<u>Recurve</u> <u>0</u>
<u>Priority</u> <u>26</u> | | | | |
| <u>Remarks, Calculations, Results:</u>
<u>SPIKE SAMPLE</u>
<u>SPIKE ID</u> <u>3529-67</u>
<u>SPIKE VOLUME</u> <u>.360 / 5 ml</u>
$\frac{5.3 \text{ ml}}{5.3 - .3 \text{ ml}} \left(\frac{360}{40} \right) = 107.7 \text{ ml}$ $\frac{(.3)}{(.3)} \left(\frac{481}{101} \right) = 481$ | | | | |
| <u>Analyte - 1</u> <u>Analyte - 2</u> <u>Analyte - 3</u> <u>Analyte - 4</u>
<u>63027/1000</u> <u>ppm</u> <u>ppm</u> <u>ppm</u>
<u>5</u> <u>ppm</u> <u>ppm</u> <u>ppm</u>
<u>Date</u> <u>Time Completed</u> <u>Lab Unit Used</u> <u>Comments</u>
<u>2/16/90</u> <u>10:13</u> <u>ppm</u> <u>100% Complete</u> | | | | |

Ion Chromatographic Analysis of the Water Digestion - Phosphate Analysis

| | | | | |
|--|--------------------------|-----------------------------|---------------------------|------------------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 726.-7374 | SEGMENT-W | 12-11-89 | 8:20 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| P04 | LA-533-105 | PPM | WB75L | 0 |
| Sample Size | Customer ID | | | |
| ? Direct | | | | |
| Remarks, Calculations, Results:
REAGENT BLANK | | | | |
| <i><1 ppm</i> | | | | |
| Analyst - 1
<i>68107/nfw</i> | Analyst - 2
<i>.5</i> | Analyst - 3
<i>Hrs</i> | Analyst - 4
<i>Hrs</i> | Analyst - 5
<i>089047</i> |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr.
<i>CHW</i> | | |
| SI-8800-081 (R-10-83) | | | | |

| | | | | |
|--|--------------------------|-----------------------------|---------------------------|------------------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 714.-7574 | SEGMENT-K | 12-11-89 | 8:16 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| P04 | LA-533-105 | % RECOVERY | WB75L | 0 |
| Sample Size | Customer ID | | | |
| 100-10 | | | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID <i>68107</i> | | | | |
| <i>96.4%</i> | | | | |
| Analyst - 1
<i>68107/nfw</i> | Analyst - 2
<i>.5</i> | Analyst - 3
<i>Hrs</i> | Analyst - 4
<i>Hrs</i> | Analyst - 5
<i>089047</i> |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr.
<i>CHW</i> | | |
| SI-8800-081 (R-10-83) | | | | |

| | | | | |
|---|--------------------------|-----------------------------|---------------------------|------------------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 136.-7174 | SEGMENT-M | 11-17-89 | 10:13 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| P04 | LA-533-105 | PPM | WB75L | 0 |
| Sample Size | Customer ID | | | |
| ? 100-10 | <i>089047</i> | | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE | | | | |
| <i><101 ppm</i> | | | | |
| Analyst - 1
<i>68107/nfw</i> | Analyst - 2
<i>.5</i> | Analyst - 3
<i>Hrs</i> | Analyst - 4
<i>Hrs</i> | Analyst - 5
<i>089047</i> |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr.
<i>CHW</i> | | |
| SI-8800-081 (R-10-83) | | | | |

| | | | | |
|---------------------------------|--------------------------|-----------------------------|---------------------------|------------------------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 135.-7074 | SEGMENT-L | 11-17-89 | 10:12 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| P04 | LA-533-105 | PPM | WB75L | 0 |
| Sample Size | Customer ID | | | |
| ? 100-10 | <i>089047</i> | | | |
| Remarks, Calculations, Results: | | | | |
| <i><101 ppm</i> | | | | |
| Analyst - 1
<i>68107/nfw</i> | Analyst - 2
<i>.5</i> | Analyst - 3
<i>Hrs</i> | Analyst - 4
<i>Hrs</i> | Analyst - 5
<i>089047</i> |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr.
<i>CHW</i> | | |
| SI-8800-081 (R-10-83) | | | | |

Ion Chromatographic Analysis of the Water Digestion - Phosphate Analysis

| | | | | | |
|---|-----------------|--------------|-------------------|-------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 138.-7574 | SEGMENT-O | | 11-17-89 | 10:13 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Runno | |
| PO4 | LA-533-105 | % RECOVERY | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| 100-10 | | | 0890-7 | | |
| Remarks, Calculations, Results: | | | | | |
| LMCS CHECK SAMPLE
LMCS ID <u>60107</u>
99.0% | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| <u>60107/1000</u> | | | <u>60107/1000</u> | <u>60107/1000</u> | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| .5 | | | | | |
| Date | Time Completed | Lab Unit Mgr | | | |
| 2/14/90 | | <u>Cgd</u> | | | |
| 84-0000-001 (F-10-83) | | | | | |

| | | | | | |
|---|-----------------|-----------------|--------------------|--------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 747.-7274 | SEGMENT-N | | 12-11-89 | 8:17 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Runno | |
| PO4 | LA-533-105 | % RECOVERY | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| ? | | | 89082 | | |
| Remarks, Calculations, Results: | | | | | |
| SPIKE SAMPLE
SPIKE ID <u>3509-67</u>
SPIKE VOLUME <u>.300 / 5ml</u>
$\frac{(.3 \text{ ml})}{(.5 \text{ ml} - .3 \text{ ml})} \frac{(2790) - 00}{(792)} \frac{(10.4)}{8.84} \times 100 = 105.7\%$ $\frac{(.3 \text{ ml})}{(.3 \text{ ml})} \frac{(792)}{(101)} \frac{5.3 \text{ ml}}{5.3 \text{ ml}}$ | | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 | |
| <u>60107</u> | | | <u>60107</u> | <u>60107</u> | |
| Hrs | Hrs | Hrs | Hrs | Hrs | |
| <u>Neal Wright</u> | | | <u>Neal Wright</u> | <u>Neal Wright</u> | |
| Date | Time Completed | Lab Unit Mgr | | | |
| 2-16-90 | | <u>Tad Pool</u> | <u>Tad Pool</u> | | |
| 84-0000-001 (F-10-83) | | | | | |

Ion Chromatographic Analysis of the Water Digestion - Sulphate Analysis

| | | | | | |
|--|--------------------------|----------------------------|--------------------|--------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 726.-7375 | SEGMENT-W | | 12-11-89 | 8:20 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| S04 | LA-533-105 | PPM | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| <p>? Direct</p> <p>REAGENT BLANK</p> <p><i><1 ppm</i></p> | | | | | |
| Analyst - 1
<i>108107/100</i> | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>OK</i> | | |
| 54-9800-081 (R-10-83) | | | | | |

| | | | | | |
|--|--------------------------|----------------------------|--------------------|--------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 714.-7575 | SEGMENT-K | | 12-11-89 | 8:16 | 26 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| S04 | LA-533-105 | % RECOVERY | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| <p>100-10</p> <p>LMCS CHECK SAMPLE</p> <p>LMCS ID <u>GC1141</u></p> <p><i>98.6 %</i></p> | | | | | |
| Analyst - 1
<i>108107/100</i> | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>OK</i> | | |
| 54-9800-081 (R-10-83) | | | | | |

| | | | | | |
|---|--------------------------|----------------------------|--------------------|--------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 136.-7175 | SEGMENT-M | | 11-17-89 | 10:13 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| S04 | LA-533-105 | PPM | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| <p>? 100-10</p> <p>DUPLICATE SAMPLE</p> <p><i><101 ppm</i></p> | | | | | |
| Analyst - 1
<i>108107/100</i> | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>OK</i> | | |
| 54-9800-081 (R-10-83) | | | | | |

| | | | | | |
|---|--------------------------|----------------------------|--------------------|--------------------|----------|
| Serial No. | Sample Point | | Date | Time Issued | Priority |
| F 135.-7075 | SEGMENT-L | | 11-17-89 | 10:12 | 19 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns | |
| S04 | LA-533-105 | PPM | WB75L | 0 | |
| Sample Size | | | Customer ID | | |
| <p>? 100-10</p> <p><i><101 ppm</i></p> | | | | | |
| Analyst - 1
<i>108107</i> | Analyst - 2
<i>.5</i> | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs | |
| Date
<i>2/16/90</i> | Time Completed | Lab Unit Mgr
<i>CJW</i> | <i>OK</i> | | |
| 54-9800-081 (R-10-83) | | | | | |

Ion Chromatographic Analysis of the Water Digestion - Sulphate Analysis

| | | | | | | | | | | |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-----------|
| Serial No. | Sample Point | Date | Time Issued | Priority | Serial No | Sample Point | Date | Time Issued | Priority | |
| F 13B.-7575 | SEGMENT-D | 11-17-89 | 10:13 | 19 | F 717.-7275 | SEGMENT-N | 12-11-89 | 8:17 | 26 | |
| Determination | Method/Standard | Result Units | Charge Code | Return | Determination | Method/Standard | Result Units | Charge Code | Return | |
| SD4 | LA-533-105 | % RECOVERY | WB75L | 0 | SD4 | LA-533-105 | % RECOVERY | WB75L | 0 | |
| Sample Site | Customer ID | | | | | | | | | |
| 100-10 | 089047 | | | | | | | | | |
| Reagent Calculations, Results: | | | | | | | | | | |
| SPIKE SAMPLE ID 32C9-67
SPIKE VOLUME $\frac{5 \text{ ml}}{300 \text{ ml}} \times 800 = 133.3 \text{ ml}$
$\frac{5.3 \text{ ml}}{5.3 \text{ ml}} \times 100 = 100\%$
$\frac{(1.3) (4.92)}{5.3 \text{ ml}} \times 100 = 105.5\%$ | | | | | | | | | | |
| 96.9 %
LMCS CHECK SAMPLE
<u>LMCS ID 1172</u> | | | | | | | | | | |
| Analyt-1 | Analyt-2 | Analyt-3 | Analyt-4 | Analyt-5 | Analyt-6 | Analyt-7 | Analyt-8 | Analyt-9 | Analyt-10 | |
| 6B107
1172
5 | 1172
1172
1172 | |
| Date | Time Completed | Lab Unit No. | Signature | Signature | | | | | | Signature |
| 2/16/90 | 2/16/90 | 2/16/90 | 2/16/90 | 2/16/90 | | | | | | 2/16/90 |

Total Organic Carbon Analysis on the Water Digestion

| | | | | | |
|--|--------------------------------|-------------------------------|--------------------------------------|----------------------------------|----------------|
| Serial No.
F 137.-7226 | Sample Point
SEGMENT-N | | Date
11-17-89 | Time Issued
10:13 | Priority
19 |
| Determination
TOC | Method/Standard
LA-344-105 | Result Units
% RECOVERY | Charge Code
WB75L | Perms
1 | |
| Sample Size
? 200uL + 100uL 5m H ₂ SO ₄ - 200uL | | | Customer ID
89047 | | |
| Remarks, Calculations, Results:
SPIKE SAMPLE
SPIKE ID 80611
SPIKE VOLUME 200uL | | | | | |
| $\frac{101.67}{(123.9-5.2)} \times 100 = 96.7\%$
(123.9-5.2) - (12-5.2)
119.7
100
100.1%
3.003
3.000 g/l | | | | | |
| Analyst - 1
80028 | Analyst - 2
Hrs
Ed Chihi | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs
R. Schmidt | |
| Date
5-30-90 | Time Completed | Lab Unit Mgr
Tall M. Balch | Handwritten Note: 8000-001 (R-10-89) | | |

| | | | | | |
|--|--------------------------------|-------------------------------|--------------------------------------|----------------------------------|----------------|
| Serial No.
F 138.-7526 | Sample Point
SEGMENT-O | | Date
11-17-89 | Time Issued
10:13 | Priority
19 |
| Determination
TOC | Method/Standard
LA-344-105 | Result Units
% RECOVERY | Charge Code
WB75L | Perms
1 | |
| Sample Size
? 200uL - 2mL - 200uL | | | Customer ID
89049 | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 706110 | | | | | |
| 100.1%
3.003
3.000 g/l | | | | | |
| Analyst - 1
80028 | Analyst - 2
Hrs
Ed Chihi | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs
R. Schmidt | |
| Date
5-30-90 | Time Completed | Lab Unit Mgr
Tall M. Balch | Handwritten Note: 8000-001 (R-10-89) | | |

| | | | | | |
|--|--------------------------------|-------------------------------|--------------------------------------|----------------------------------|----------------|
| Serial No.
F 135.-7026 | Sample Point
SEGMENT-L | | Date
11-17-89 | Time Issued
10:12 | Priority
19 |
| Determination
TOC | Method/Standard
LA-344-105 | Result Units
G/L | Charge Code
WB75L | Perms
1 | |
| Sample Size
? 1mL + 100uL 5m H ₂ SO ₄ - 200uL | | | Customer ID
89049 | | |
| Remarks, Calculations, Results:
$1.38 \times 10^{-2} \text{ g/l}$ | | | | | |
| Analyst - 1
80028 | Analyst - 2
Hrs
Ed Chihi | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs
R. Schmidt | |
| Date
5-30-90 | Time Completed | Lab Unit Mgr
Tall M. Balch | Handwritten Note: 8000-001 (R-10-89) | | |

| | | | | | |
|--|--------------------------------|-------------------------------|--------------------------------------|----------------------------------|----------------|
| Serial No.
F 136.-7126 | Sample Point
SEGMENT-M | | Date
11-17-89 | Time Issued
10:13 | Priority
19 |
| Determination
TOC | Method/Standard
LA-344-105 | Result Units
G/L | Charge Code
WB75L | Perms
1 | |
| Sample Size
? 1mL + 100uL 5m H ₂ SO ₄ - 200uL | | | Customer ID
89049 | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE
$1.21 \times 10^{-2} \text{ g/l}$ | | | | | |
| Analyst - 1
80028 | Analyst - 2
Hrs
Ed Chihi | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs
R. Schmidt | |
| Date
5-30-90 | Time Completed | Lab Unit Mgr
Tall M. Balch | Handwritten Note: 8000-001 (R-10-89) | | |

Total Organic Carbon Analysis on the Water Digestion

F0137-72226

$$\frac{1500 \text{ ug}}{\text{L}} \times 0.1 \text{ mL} = 300.0 \text{ ug}$$

$$\frac{300 \text{ ug}}{0.5 \text{ mL}} = 600 \text{ ug/L} \quad \frac{600 \text{ ug}}{\text{L}} \times 0.2 \text{ mL} = 120.0 \text{ ug}$$

$$\frac{(120.0 \text{ ug} - 5.2 \text{ ug})}{120 \text{ ug}} \times \left[\frac{7.74 \text{ g/L}}{9.25 \text{ g/L}} \right] \times \frac{116.0\%}{\cancel{116.0\%}} = \frac{9.67}{\cancel{116.0\%}} = 9.67\%$$

$$\frac{9.67}{100} \times 100 = 96.7\%$$

Total Organic Carbon Analysis on the Water Digestion

| | | | | |
|--|-------------------------------|--|----------------------|------------------------|
| Serial No.
F 134.-7526 | Sample Point
SEGMENT-K | Date
11-17-89 | Time Issued
10:12 | Priority
19 |
| Determination
TOC | Method/Standard
LA-344-105 | Result Units
% RECOVERY | Charge Code
WB75L | Reurne
1 |
| Sample Size
? 200uL - 2mL - 200uL | Customer ID
89049 | | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 700110 | | | | |
| <p style="text-align: center;">96.8%</p> <p style="text-align: center;">2904g/l
300g/l</p> | | | | |
| Analyst - 1
80027
<i>Ed Cohn</i> | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
x/blank |
| Date
5.30.90 | Time Completed | Lab Unit Mgr
<i>Tall Paul Kelly</i> | 3-3000-001 (A-10-B2) | |

| | | | | |
|---|-------------------------------|--|----------------------|------------------------|
| Serial No.
F 146.-7326 | Sample Point
SEGMENT-W | Date
11-17-89 | Time Issued
10:14 | Priority
18 |
| Determination
TOC | Method/Standard
LA-344-105 | Result Units
ppm | Charge Code
WB75L | Reurne
1 |
| Sample Size
? 200uL | Customer ID
89049 | | | |
| Remarks, Calculations, Results:
REAGENT BLANK | | | | |
| <p style="text-align: center;">.7422 ug/min
5.2ug</p> | | | | |
| Analyst - 1
80027
<i>Ed Cohn</i> | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
x/blank |
| Date
5.30.90 | Time Completed | Lab Unit Mgr
<i>Tall Paul Kelly</i> | 3-3000-001 (A-10-B2) | |

Acid Digestion

| | | | | |
|--|-----------------|---------------|-------------------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 142.-8200 | SEGMENT-S | 11-17-89 | 10:13 | 23 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| ACD-DGST | LA-505-159 | % RECOVERY | WB75L | 0 |
| Sample Size | <i>5ml sf</i> | Customer ID | | |
| ? | | 0890-47 | | |
| Remarks, Calculations, Results: Sample + spike
GRAMS SAMPLE
VOLUME ON COMPLETION <u>5ml</u>
<u>8.98 -3</u> g/ml | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| (69769) | | | | |
| <i>O. Southwick</i> | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr. | <i>CJW off J. Moniz</i> | |
| 2/1/90 | | | 64-6000-001 (R-10-83) | |

| | | | | |
|---|-----------------|---------------|-------------------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 147.-8300 | SEGMENT-X | 11-17-89 | 10:14 | 18 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| ACD-DGST | LA-505-159 | <u>G4/gml</u> | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? | | 089047 | | |
| Remarks, Calculations, Results:
REAGENT BLANK
VOLUME ON COMPLETION <u>5ml</u>
<i>Completed</i> | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| (69769) | | | | |
| <i>O. Southwick</i> | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr. | <i>CJW off J. Moniz</i> | |
| 2/1/90 | | | 64-6000-001 (R-10-83) | |

| | | | | |
|---|-----------------|------------------|-------------------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 140.-8000 | SEGMENT-Q | 11-17-89 | 10:13 | 23 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| ACD-DGST | LA-505-159 | <u>G4/gml sf</u> | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? | | 089047 | | |
| Remarks, Calculations, Results:
GRAMS SAMPLE
VOLUME ON COMPLETION <u>5ml</u>
<u>1.11 -2</u> g/ml | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| (69769) | | | | |
| <i>O. Southwick</i> | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr. | <i>CJW off J. Moniz</i> | |
| 2/1/90 | | | 64-6000-001 (R-10-83) | |

| | | | | |
|---|-----------------|---------------|-------------------------|-------------|
| Serial No. | Sample Point | Date | Time Issued | Priority |
| F 141.-8100 | SEGMENT-R | 11-17-89 | 10:13 | 23 |
| Determination | Method/Standard | Result Units | Charge Code | Reruns |
| ACD-DGST | LA-505-159 | <u>G4/gml</u> | WB75L | 0 |
| Sample Size | | Customer ID | | |
| ? | | 089047 | | |
| Remarks, Calculations, Results:
DUPLICATE ANALYSIS
GRAMS SAMPLE
VOLUME ON COMPLETION <u>5ml</u>
<u>9.78 -3</u> g/ml | | | | |
| Analyst - 1 | Analyst - 2 | Analyst - 3 | Analyst - 4 | Analyst - 5 |
| (69769) | | | | |
| <i>O. Southwick</i> | Hrs | Hrs | Hrs | Hrs |
| Date | Time Completed | Lab Unit Mgr. | <i>CJW off J. Moniz</i> | |
| 2/1/90 | | | 64-6000-001 (R-10-83) | |

ICP Analysis

| | | | | |
|---|-------------------------------|----------------------------------|--|--------------------|
| Serial No.
F 141.-B150 | Sample Point
SEGMENT-R | Date
11-17-89 | Time Issued
10:13 | Priority
23 |
| Determination
ICP | Method/Standard
LA-505-151 | Result Units
PPM | Charge Code
WB7SL | Reruns
0 |
| Sample Size
? 100-10 & 500-10 | | Customer ID
89047 | | |
| Remarks, Calculations, Results:
DUPLICATE SAMPLE | | | | |
| RERUN | | | | |
| <i>Complete</i> | | | | |
| Analyst - 1
65283
J. White | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
4-19-90 | Time Completed
02 | Lab Unit Mgr
<i>Todd Pool</i> | Dyanne Suckle
SI-6000-081 (4-10-83) | |

| | | | | |
|----------------------------------|-------------------------------|---------------------------------|--|--------------------|
| Serial No.
F 140.-B050 | Sample Point
SEGMENT-Q | Date
11-17-89 | Time Issued
10:13 | Priority
23 |
| Determination
ICP | Method/Standard
LA-505-151 | Result Units
PPM | Charge Code
WB7SL | Reruns
0 |
| Sample Size
? 100-10 & 500-10 | | Customer ID
89047 | | |
| Remarks, Calculations, Results: | | | | |
| RERUN | | | | |
| <i>Complete</i> | | | | |
| Analyst - 1
65283
J. White | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
4-19-90 | Time Completed
02 | Lab Unit Mgr
<i>J. White</i> | Dyanne Suckle
SI-6000-081 (4-10-83) | |

| | | | | |
|---|-------------------------------|----------------------------------|--|--------------------|
| Serial No.
F 1087.-B250 | Sample Point
SEG.COMP#23 | Date
2-16-90 | Time Issued
8:16 | Priority
26 |
| Determination
ICP | Method/Standard
LA-505-151 | Result Units
PPM | Charge Code
E21D1 | Reruns
0 |
| Sample Size
? 100-0 & 500-10 | | Customer ID
000013 | | |
| Remarks, Calculations, Results:
SPIKE SAMPLE ?
SPIKE ID
SPIKE VOLUME | | | | |
| <i>Complete</i> | | | | |
| Analyst - 1
65283
J. White | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
4-19-90 | Time Completed
02 | Lab Unit Mgr
<i>Todd Pool</i> | Dyanne Suckle
SI-6000-081 (4-10-83) | |

| | | | | |
|--|-------------------------------|----------------------------------|--|--------------------|
| Serial No.
F 1088.-B550 | Sample Point
SEG.COMP#24 | Date
2-16-90 | Time Issued
8:16 | Priority
26 |
| Determination
ICP | Method/Standard
LA-505-151 | Result Units
% RECOVERY | Charge Code
E21D1 | Reruns
0 |
| Sample Size
? Direct | | Customer ID
000013 | | |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE
LMCS ID 82C11A | | | | |
| <i>Digested STD.</i>
<i>Complete</i> | | | | |
| Analyst - 1
65283
J. White | Analyst - 2
Hrs | Analyst - 3
Hrs | Analyst - 4
Hrs | Analyst - 5
Hrs |
| Date
4-19-90 | Time Completed
02 | Lab Unit Mgr
<i>Todd Pool</i> | Dyanne Suckle
SI-6000-081 (4-10-83) | |

ICP Analysis

| | | | | |
|--|-----------------|--------------|--------------|-------------|
| Serial No. | Sample Point | Date | Time Started | Priority |
| F 1094 - BZ50 | SEG. COMP#20 | 2-16-90 | 8:16 | 26 |
| Determination | Method/Standard | Report Units | Charge Code | Run No. |
| ICP | LA-505-151 | PPM | E21D1 | 0 |
| Sample ID | | | | Customer ID |
| ? Direct | | | | 000013 |
| Remarks, Calculations, Results:
REAGENT BLANK | | | | |
| <i>Complete</i> | | | | |

| | | | | |
|--|----------------|-------------|--------------|-------------|
| Analyte - 1 | Analyte - 2 | Analyte - 3 | Analyte - 4 | Analyte - 5 |
| 65283 | Hg | Hg | Hg | Hg |
| J. White | Time Completed | Tell Mech | Lab Unit: Hg | Op |
| 4-19-90 | | | | |
| Remarks, Calculations, Results:
REAGENT BLANK | | | | |
| <i>Complete</i> | | | | |

| | | | | |
|--|-----------------|--------------|--------------|-------------|
| Serial No. | Sample Point | Date | Time Started | Priority |
| F 1094 - BZ50 | SEG. COMP#21 | 2-16-90 | 8:16 | 26 |
| Determination | Method/Standard | Report Units | Charge Code | Run No. |
| ICP | LA-505-151 | PPM | E21D1 | 0 |
| Sample ID | | | | Customer ID |
| ? Direct | | | | 000013 |
| Remarks, Calculations, Results:
LMCS CHECK SAMPLE LMCS ID: 8/CLIA | | | | |
| <i>Complete</i> | | | | |

| | | | | |
|--|----------------|-------------|--------------|-------------|
| Analyte - 1 | Analyte - 2 | Analyte - 3 | Analyte - 4 | Analyte - 5 |
| 65283 | Hg | Hg | Hg | Hg |
| J. White | Time Completed | Tell Mech | Lab Unit: Hg | Op |
| 4-19-90 | | | | |
| Remarks, Calculations, Results:
REAGENT BLANK | | | | |
| <i>Complete</i> | | | | |